Report on the Health

OF THE

County Borough of Stockport,

FOR THE YEAR

1894,

BY

CHARLES PORTER, M.D.,

BACH. SURG., D.P.H., M.R.C.S.,

MEDICAL OFFICER OF HEALTH,

AND

Medical Superintendent of the Isolation Hospital.

STOCKPORT:
NEW CHESHIRE COUNTY NEWS CO., LIMITED, WELLINGTON STREET.

With Dr. Charles Porter's Compliments.

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NEW CHESHIRE COUNTY NEWS CO., LIMITED, WELLINGTON STREET.

SANITARY COMMITTEE, 1894.

Chairman—Councillor Bell.

Vice-chairman—Councillor Hancock.

The Mayor.

Aldermen Goulden, Hallam, Mellor.

Councillors Allcock, Brentnall, Bostock, Broadhurst, Blackshaw, Gould, Hidderley, Johnson, Lowe, Joseph Marshall, Minshull, Shuttleworth, Wakefield, Williamson, Winkley.

MONDAY—FIXED MEETINGS.

January	1	April	9	July	16	October	22
,,	15	,,	23	,,	30	November	5
,,	29	May	7	August	13	,,	19
February	12	,,	21	,,	27	December	3
,,	26	June	4	September	10	,,	17
March	12	,,	18	,,	24	,,	31
,,	26	July	2	October	8		

AT 3 O'CLOCK P.M.

HOSPITAL SUB-COMMITTEE.

Chairman—Councillor Allcock.

Alderman Goulden.

Councillors Bell, Broadhurst, Bostock, Gould, Hancock, Hidderley, J. G. Johnson, Lowe, Joseph Marshall, Minshull, and Winkley.

MEETINGS—WHEN REQUIRED.

INDEX.

——:o:——

A

	PAGE.
Abattoir, Public, desirability of	73
Age and Sex in relation to Mortality	14, 15, 16
Area of Borough	10

B

Back to Back Houses	53
Bakehouses	71
Regulations for	72
Prohibited in Cellars	76
Baths	52
Bill of Mortality, 1750-1800	5
Births and Birth-rate	11
Birthplaces	8
Brook-courses, Brook-culverts	56
Bronchitis, Pneumonia, and Pleurisy	42
Byelaws	66

C

Canal	78
Cellar Dwellings	53
Cemetery	49
Census Returns, 1891	7, 8, 9
Civil and Ecclesiastical Parishes, Wards, Tenements	7
Sex and Age, Distribution of Population	8
Conditions as to Marriage, Birthplaces, &c.	8
Chlorinated Water as a disinfectant	49
Cholera, preparations against	30
Special Duties as regards	31
Survey by Dr. Bruce Low	30

C

PAGE.

- Coffins, "Sanitary" 50
- Common Lodging Houses 77
  - Nightly Inspection of 26 & 77
- Comparative Statistics of Stockport and similar towns 17
- Complaints by Public 69
- Consumption, Pulmonary (Phthisis) 41
  - Influence of tuberculous food in causing 41
- Contagious Diseases (Animals) Act 78
- Continued Fevers 28, 29
- Coroners' Certificates 18
- Cows, Milch, Veterinary Inspection of 70
- Cowsheds 69
- Cowsheds Register Appendix No. 2

D

- Dairies 69
- Dairies, Cowsheds, &c., Regulations 81
- Dairies Order, Placard 70, 71
- Deaths and Death-rate 13
- Diarrhœa, Causes and Prevalence 31, 32
  - A Cause of Infant Mortality 18, 31
  - Relation to Earth Temperature 32
  - Relation to Typhoid 32
- Diphtheria 37
  - Antitoxin, Treatment of 38
  - Bacterioscopic Examination in 38
  - Hospital Treatment desirable 38
  - Relations to Insanitary Conditions 37
  - Relation to Membranous Croup 37
- Disinfection 48
  - Saturated and Superheated Steam 48
- Disinfecting Apparatus 48
  - Exhaust Indicator, Professor Delépine's 48

E

- Enteric Fever 29, 30
  - Occurrences and Deaths, 1884-1894 29
  - History of Epidemic, 1893 29
  - Influence of Geological Conformation 29
  - Liability to Future Outbreaks 30
  - Infectivity of Urine in 30

E

PAGE.

Erysipelas 40
Estimated Population, 1894 10

F

Factory Act, 1895, Provisions of 75, 76
Factory Labour and Infant Mortality .... 19 to 22
Flushing Tanks for Sewers 58
Flushing Van 58
Food and Drugs Act, Sale of 78
Foreigners 8
Future Action, Lines of 80

G

Geological Features of District 5
Growth of Stockport, 1750-1891 .... 5, 6

H

Hospital Accommodation, necessity for increased 46, 47, 81
House Census, Annual, necessary 11
House Drainage 54, 55
Houses in each Ward 10
Houses Let in Lodgings, tenements 77
Housing of the Working Classes 52-54
Hygiene, instruction in desirable 23

I

Industries 52
Infant Mortality, causes and prevention of 18-23
Infantile Birth-rate and Mortality 19
Infant Deaths, 1889-1894, analyses of causes 18
Infant Insurance 19
Infectious Diseases Notification Act 24
,, ,, Method of dealing with 49
Influenza 39
  Causes of excessive respiratory mortality 39, 40
  Deaths from in England since 1890 39

I

PAGE.

Inquests 18
Inspection, General, of District 66-68
Intercepting Sewers 60
Introductory Remarks 2, 3
Isolation Hospital, Site, distance from dwellings, cost, income and expenditure 1888-1894, description, staff, structural alterations, need for extension, &c. 42-47

L

Lamp Holes 57
Laundries, to be regulated by Factory Act, 1895 75
Legal Proceedings 54, 73, 79
Low, Dr. Bruce, Visit and Recommendations of. 30, 31, 47, 51, 61
Lung Diseases 41
  Increased Mortality from 39, 42

M

Manholes 57, 59
Marriages and Marriage-rate 11
Measles and Question of Notification of 32, 35
  Cautionary Handbill 33
  Circular to School Teachers 33
Meat Inspection 73
Membranous Croup, see Diphtheria 37
Meteorological Station 52
Milkshops 69
Milkshops Regulations 70, 81

N

Notifications of Infectious Diseases 24
  Procedure on receipt of 49
Nurseries, Registered Cottage 22, 81

O

Occupations of Males and Females, Census, 1891 9
Offensive Trades 74

P

PAGE.

Paupers, Isolation of Infectious 47
Phthisis, see Consumption 41
Pleurisy 42
Pneumonia 40, 42
Population, estimated 10
Privies, Converted to Water Closets 68
Privy-middens, Danger to Health from 3, 29, 30, 31, 59, 61, 62, 63, 80
Privy-middens, Schemes for conversion of........ 63
Prosecutions :—
    General........ 79
    Insanitary Dwellings........ 54
    Meat........ 73
Puerperal Fever 40
Purification of Sewage 60

R

Refuse disposal 61
Revision of Bye-laws 66
Rivers Goyt, Tame, and Mersey 52

S

Sanitary Committee, Members of 2
Scarlet Fever 35-37
    Introduced from circumjacent districts 37
    Doubtful cases in Edgeley........ 36
    Recurrences after discharge from Hospital........ 36
Scavenging 64
"Scamped" drainage work 68, 69
Schools........ 61
    Closet accommodation of 61
    Foci of Scarlet Fever........ 35, 36
      ,, Measles 33
    Medical Inspection of........ 36
Sewer Air, Laws and Andrewes' report on relation to sewage, diphtheria, and typhoid 59, 62

S

PAGE.

- Sewerage System 56
  - Old Flagged Sewers 56
  - Brook Courses 56
  - Modern and New Sewers 57
  - Intercepting Sewers 60
  - Flushing 58
  - Ventilation 59
  - Special Action of Highways Committee 59
- Sex and Age in relation to Mortality 14, 15, 16
- Shaft Ventilation 58
- "Single" Houses 53
- Slaughter-houses 72
- Slop-Closets 61
- Small-Pox 24—27
- Smoke Nuisances 77
- Statistics 6-14
- Statistical Summary 12
- Surface Configuration of District 5

T

- Tenements 7, 66
- Tips 65
- Tripe Dressers 74
- Tuberculous Food, Effect on Health 41, 70, 73, 74
- Typhoid Fever, see Enteric 29, 30
- Typhus Fever 28

U

- Uncertified Deaths 18

V

- Vaccination 28
- Vagrancy and Infectious Disease 26, 27
- Ventilation of Workshops 75
- Ventilation of Sewers 59

W

PAGE.

Water Filtration, Frankland on ... 51
Water Supply ... 50—52
Whitehill Hospital ... 46
Whooping Cough ... 41
Workshops, Inspection of, &c. ... 75

Z

Zymotic Disease ... 23

COUNTY BOROUGH OF STOCKPORT.

PUBLIC HEALTH DEPARTMENT,

SEPTEMBER 30th, 1895.

To the Right Worshipful the Mayor, Aldermen, and Councillors of the County Borough of Stockport.

MR. MAYOR AND GENTLEMEN,

I have the honour of submitting to you my Report upon the Health of your Borough during the year 1894, prepared in compliance with the orders of, and on the lines indicated by, the Local Government Board.

For the year under notice the death-rate of England and Wales (16·6) was the lowest on record, being 1·5 per 1,000 below the lowest previous rate (18·1 in 1888). The death-rate of Stockport (18·7) was even more remarkable, being as much as 4 per 1,000 below the lowest previous rate (22·7 in 1892), and no less than 6·7 below the corrected average (25·4) for the decennium 1884 to 1893. As stated more fully at page 13 this astonishing decrease is mainly attributable to the lessened zymotic mortality. During 1894 the Borough enjoyed an almost entire freedom from measles and whooping cough, which were so destructively prevalent in 1893, and which, unfortunately, are almost certain to recur periodically in epidemic form as fresh generations of unprotected children arise. A more important and significant cause of the low death-rate, however, lies in the fact that the deaths from diarrhœa and diphtheria were less than half, and from typhoid fever about one-fifth of the number which occurred in 1893. As regards diarrhœa, typhoid, and perhaps diphtheria, I am of opinion that this lessened mortality was mainly due to the comparatively cool summer of 1894, and that as long as the existing midden-privies continue to pollute the air and soil of your Borough, so long will typhoid fever and diarrhœa become seriously prevalent during and for some time after every hot season.

I beg therefore to direct your special attention to the section of this Report dealing with Excrement and Refuse Disposal and Scavenging (pp. 61-2-3), and to ask you to face and comprehensively consider this important question, for I am quite convinced that the most zealous efforts of your Health Department must be of comparatively little avail whilst such aggravated sources of ill-health and disease continue to exist amongst the homes of the people.

At pp. 15 and 16 some interesting statistics for the years 1891-2-3-4 are tabulated in regard to the death-rate at different groups of ages calculated upon the estimated number of persons living in Stockport in each of those age periods, a method of stating death-rates which is obviously of very considerable value. The enormous mortality of infants under one year of age is strikingly shewn, and at pp. 18 to 23 I have at some length recorded the results of further inquiry into the cause of and possible remedies for this evil.

I have again to acknowledge the valued assistance of Dr. Edwin Rayner, J.P.; and of Dr. Hyde Marriott in regard to the Isolation Hospital. I am also much indebted to the Town Clerk and your other Chief Officials.

Finally, I beg to cordially thank the Chairman and members of the Sanitary Committee and the members of the Council in general for the courteous consideration and encouraging support with which they have continued to favour me.

I have the honour to be,

Mr. Mayor and Gentlemen,

Your obedient servant,

CHARLES PORTER,

Medical Officer of Health.

Topographical Features of Stockport.

Surface Configuration. Stockport is said to derive its name from two Saxon words, signifying "a castle in a wood." As regards its site an old writer quaintly says, "there is not in England a more irregular spot of ground than that upon which this town stands." Occupying the summit of an eminence overlooking the Mersey from the south are the Castle Yard and Market Place, which are believed to correspond with the site of the ancient town, and are approached from below by steep and narrow streets. In its growth the town has extended upwards and laterally on both the Cheshire and Lancashire sides of the valley through which flows the River Mersey formed by the junction of the two streams Goyt and Tame, the newest portions of the Borough now being at a considerable distance from the river.

Geology.* The Coal Measures, Permian Sandstone, Permian Marl, and Pebble Beds form the solid rocks of the District. Overlying them is the Glacial Drift presenting great variations in thickness and in the proportion of the sand, gravel, and clay of which the beds are composed. On the Cheshire side of the River Mersey, the greatest depth (111 feet) is said to occur near the junction of Hempshaw Lane and Higher Hillgate. From this point the thickness of the Drift diminishes from 90 feet under Castle Street to 47 feet at the western boundary of Edgeley. On the Lancashire side of the river the thickness of the Drift, which is about 40 feet at the junction of Coronation Street and Sandy Lane increases to nearly 127 feet at the Chemical Works at North Reddish. The order of superposition of the sand, gravel and clay composing the Drift also varies very much and will be again referred to, as it can hardly be doubted that under certain circumstances the existing geological conditions exert an important influence on the health of the community.

Growth and Vital Statistics of Stockport.

The first written document of the existence of Stockport Castle is dated in the year 1173, in the nineteenth year of Henry the Second. About 1220 A.D., Stockport was constituted a free borough, by virtue of a charter granted at that time by the feudal lord, Sir Robert de Stokeport. Up to the passing of the Reform Act, of 1832, the township of Stockport, which was co-extensive with the Manor and Barony, comprised the whole town. With regard to statistics it is stated that in the years 1664 and 1665 respectively 67 and 101 deaths were occasioned by the plague, and with reference to the latter half of the following century, the appended interesting information is given by Corry:—

STOCKPORT BILL OF MORTALITY.

YEAR.	MARRIED.	BAPTIZED.	BURIED.
1750	47	107	206
1770	93	110	209
1780	108	173	250
1790	224	316	369
1800	—	564	656

---

* *Vide "Notes on Glacial Geology of Stockport," by J. W. Gray, F.G.S*

The earliest enumeration of the population was taken in 1754, and may be here quoted together with the statistics of the first four decades of the present century :—

STATISTICS OF THE TOWNSHIP OF STOCKPORT.

EXTENT 1740 STATUTE ACRES.

YEAR.	INHABITED HOUSES.	FAMILIES.	MALES.	FEMALES.	POPULATION	ANNUAL RATEABLE VALUE.			YEAR.
						£	s.	d.	
1754	995*a*	741	— -	——	3101	1879	0	0 *b*	1754
1801	2572	2965	6983	7847	14830	11284	5	0 *c*	1801
1811	3162	3563	7977	9568	17545	———			1811
1821	3405	4342	10495	11231	21726	44117	0	0 *d*	1821
1831	4973	5229	12221	13248	25469	52477	0	0 *e*	1831

a. In 1779. *c*. In 1792.
b. In 1768. *d*. In 1819.
e. In 1836.

In 1832 the constitution of the parliamentary borough was altered by statute and was made to include, in addition to the ancient township, portions of the townships of Cheadle Bulkeley, Cheadle Moseley, and Brinnington in the County of Chester, and of Heaton Norris in the County of Lancaster. In 1836 by the passing of the Municipal Corporations' Act, the Borough of Stockport was incorporated, and was included in the list of towns to be divided into seven wards with a Council of fourteen Aldermen and forty-two Councillors. Lastly, in 1888 Stockport was constituted a County Borough by the Local Government Board Act of that year.

The particulars set forth in the following table record the general growth of the Borough during the fifty years, 1841 to 1891 :—

Census of Population.	Increase or decrease per cent in previous decennium.	Inhabited Houses.	Uninhabit'd Houses.	Houses building.	Rateable Value.		
					£	s.	d.
1841 .. 50,495	———	8,814	1,157	——	113,813	3	0
1851 .. 53,835	6·6 increase.	10,568	——	——	106,732	0	0
1861 .. 54,682	1·5 decrease.	11,298	——	——	113,936	13	10
1871 .. 53,001	3·1 increase.	——	——	——	144,660	14	0
1881 .. 59,544	12·3 increase.	13,007	1,558	74	189,450	0	0
1891 .. 70,263	18·0 increase.	15,573	1,216	100	236,952	9	8

A study of these figures shows that during this time, 1841 to 1891, the increase in the population has been equal to 39·1 per cent. of that in 1841. In the forty years, 1851 to 1891, the increase has been at the rate of 30·5 per cent. During the decennia, 1851 to 1861, and 1861 to 1871, the Crimean War, Indian Mutiny, the great Weaving Strike, and the Cotton Famine occurred, and it is perhaps not surprising that the population practically remained stationary ; from the end of the latter period, however, up to 1891, it has increased at the rate of 32·5 per cent. Finally the census returns of 1891 show an increase of 18·0 per cent. over those of 1881.

Information with regard to the County Borough of Stockport from the Census Returns of 1891.

CIVIL PARISHES OR TOWNSHIPS.*

	Inhabited Houses.	Families or Separate Occupiers.	Population.
Brinnington (part of) ...	1,446	1,463	6,576
Cheadle (part of) ...	2,267	2,273	10,022
Heaton Norris (part of) ...	3,746	3,819	16,368
Stockport	8,114	8,222	37,297
County Borough of Stockport	15,573	15,777	70,263

* By "Civil parish or township" is meant a place in which a poor rate is separately levied.

THE ECCLESIASTICAL PARISHES OR DISTRICTS.

	Date of Formation.	Inhabited Houses.	Population
STOCKPORT.			
St. Mary ...	——	2,853	12,807
St. Matthew with Brinksway	1844	2,402	10,586
St. Peter	1838	810	3,507
St. Thomas	1875	4,800	22,621
PORTWOOD, St. Paul	1846	1,538	7,061

MUNICIPAL WARDS.

Ward.	Houses.			Population.		
	Inhabited.	Uninhabited.	Building.	Persons.	Males.	Females.
Edgeley	4,104	190	27	18,889	8,616	10,273
Heaton Norris ...	3,746	229	6	16,368	7,577	8,791
Middle	1,779	246	—	8,050	3,851	4,199
Portwood	1,829	239	1	8,195	3,886	4,309
St. Mary	1,387	196	48	6,124	2,803	3,321
St. Thomas	2,728	116	18	12,637	6,056	6,581
Totals ...	15,573	1,216	100	70,263	32,789	37,474

* The Registrar General states that the above return of 'un-inhabited houses" includes in most cases lock-up shops, factories, and offices.

TENEMENTS.*

TOTAL TENEMENTS, 15,777.

Rooms in Tenement.	No. of Tenements with less than 5 rooms.	Number of occupants or tenements.											
		1	2	3	4	5	6	7	8	9	10	11	12 or more
1	159	45	63	25	15	6	3	2	—	—	—	—	—
2	1875	325	576	385	230	162	106	49	28	12	—	1	1
3	578	41	128	122	104	64	52	34	15	9	3	1	5
4	7963	249	1310	1563	1435	1209	867	641	366	186	91	33	13

* The Census instructions define a tenement as "any house or part of a house separately occupied by the owner or by a tenant."

AGES OF MALES AND FEMALES.

Age Period.	Males.	Females.	Age Period.	Males.	Females.
Under 1 year	888	936	35 years & under 40 years	2,284	2,590
1 year and under 2 years	793	817	40 ,, ,, 45 ,,	1,909	2,129
2 years ,, 3 ,,	768	776	45 ,, ,, 50 ,,	1,488	1,783
3 ,, ,, 4 ,,	792	834	50 ,, ,, 55 ,,	1,245	1,629
,, ,, 5 ,,	835	769	55 ,, ,, 60 ,,	901	1,198
Total under 5 years ...	4,076	4,132	60 ,, ,, 65 ,,	805	1,045
5 years and under 10 years	3,738	3,895	65 ,, ,, 70 ,,	500	694
10 ,, ,, 15 ,,	3,860	3,877	70 ,, ,, 75 ,,	337	418
15 ,, ,, 20 ,,	3,256	3.924	75 ,, ,, 80 ,,	146	205
20 ,, ,, 25 ,,	2,954	3,618	80 ,, ,, 85 ,,	53	65
25 ,, ,, 30 ,,	2,807	3,314	85 ,, ,, 90 ,,	6	21
30 ,, ,, 35 ,,	2.421	2,934	90 ,, ,, 95 ,,	3	3

Total Number of Males	32,789
,, ,, Females	37,474
Total Number of Persons	70,263

The proportion of males to females is as 1 to 1·14, or about 7 to 8.

CONDITIONS AS TO MARRIAGE.

		All Ages.	under 15 years.	15-20	20-25	25-35	35-45	45-55	55-65	65 and upwards.
Unmarried	Males ...	19,283	11,674	3,233	2,131	1,363	498	231	83	70
	Females	21,703	11,904	3,828	2,483	1,963	754	435	221	115
Married	Males ...	12,265	.. ..	23	814	3,778	3,530	2,270	1,308	542
	Females	12,462	....	93	1,128	4,111	3,511	2,212	1,066	341
Widowed	Males ..	1,241	.. ..	......	9	87	165	232	315	433
	Females	3,309	....	3	7	174	454	765	956	950

BIRTHPLACE OF MALES AND FEMALES.

Where born.	Males.	Females.	Where born.	Males.	Females.
Cheshire	19,665	21,803	Islands in the British seas	23	37
Lancashire	7,735	8,847	British Colonies, &c.	71	119
London	256	303	Foreign Countries ...	99	91
Other parts of England	3,681	4,699	At Sea	5	6
Scotland	179	220			
Ireland	1,075	1,349	Total	32,789	37,474

COUNTRY OF BIRTH OF FOREIGNERS.

United States of America	25	34	France	5	6
Germany ...	13	7	Greece	7	
Russia	11	6	Other Europ'n Countries	9	13
Poland	8	4	Others	2	2

OCCUPATIONS OF MALES AND FEMALES, AGED 10 YEARS AND UPWARDS, IN THE URBAN SANITARY DISTRICT OF STOCKPORT.

Occupations.	Males.	Females.
I. Professional Class.		
Civil Servants, Police, Army, Poor-law Officials &c	215	21
Clerical profession	70	17
Legal..	68	1
Medical and Dental ..	41	..
Veterinary	5	..
Nurses	19	88
Teachers and School Officers	83	233
Students over 15	72	103
Engineers and Surveyors ..	22	..
Artists, Photographers, Musicians, Literary, &c.	145	40
II. Domestic Class.		
Indoor servants, charwomen, washing services, &c.	172	2415
III. Commercial Class.		
Merchants, Agents, Bankers	302	..
Commercial Travellers ..	129	..
Commercial Clerks	540	51
Railway Engine Drivers, Porters, Clerks, &c.	850	8
Coachmen, Cabmen, Carters	853	1
Messengers, Porters, Watchmen, &c. ..	476	10
IV. Agricultural Class.		
Farmers, Labourers, and those engaged about animals	437	8
V. Industrial Class.		
1. *Mechanical.*		
Printers, Lithographers, Bookbinders, &c ..	257	31
Machine-Makers, Fitters, Turners, Millwrights	554	6
Blacksmiths..	169	..
Other Metal Workers ..	501	9
Boiler and Engine Tenders	195	..
Watch and Instrument Makers and Dealers ..	103	3
Housebuilding Trades ..	1650	9
Furniture Makers & Dealers	197	42
Carriage and Cycle Dealers	97	1
Brickmakers	118	..
2. *Lodging, Food, &c.*		
Hotel Keepers, Publicans, &c.	123	78
Brewers and Maltsters ..	82	4
Wine, Spirit, & Beer Sellers	71	24
Milksellers	78	10
Butchers	243	24
Fishmongers and Poulterers	56	10
Bakers and Confectioners..	240	229
Grocers	412	131
Greengrocers	134	34
Other purveyors of food ..	193	123
3. *Textile.*		
Woolworkers and Dealers	41	40
Silkworkers and Dealers ..	23	46
Cotton and Cotton Goods Workers	4493	7654
Cotton and Calico Printers and Bleachers ..	378	107
Threadmakers	146	348
Flax and Linen Workers ..	12	52
Cotton, Linen, and Thread Dealers	46	2
Hempworkers and Dealers	159	51
Others	204	14
4. *Tanners, Curriers, &c.*	187	41
5. *Clothing.*		
Hatters	2764	1682
Tailors and Milliners ..	317	815
Boot and Clog Makers ..	320	19
Wigmakers and Hairdressers	70	3
Others	37	112
6. *Miscellaneous.*		
Chemists and Druggists ..	46	5
Tobacconists	81	112
Pawnbrokers	27	17
Coalworkers and Dealers ..	294	1
Labourers (various) ..	1497	31
Other industrial occupations	801	254
VI. Unoccupied Class.		
Retired from business ..	382	218
Pensioners	25	..
Living on own means ..	159	571
Others (over 10 years) ..	2522	13329

Statistics for 1894.

TOTAL AREA of the Parliamentary, Municipal, and County Borough, 2,200 acres.

ESTIMATED POPULATION.

In the Registrar General's Statistical Summary for the past year, the population of Stockport in the middle of 1894 is estimated at 74,143. This figure is of necessity the result of a purely mathematical calculation, based upon an assumption, which may or may not be correct, that the average yearly rate of increase manifested in the decennium 1881-91 has been maintained during the period which has elapsed since the Census of 1891.

Taking the natural increase of the population, *i.e.*, the excess of births over deaths since the Census of 1891, as the measure of its growth, we get the figure 72,247, thus :—

Population in 1891	70,263
Excess of births over deaths from Census Day, 1891, to 30th June, 1894	1,984
Total	72,247

This method, however, is fallacious, inasmuch as the important factors of immigration and emigration are ignored. Probably, the method of estimation least open to objection is one based upon the number of inhabited houses at Midsummer, 1894, which is arrived at as follows :—

Inhabited houses at Census of 1891	15,573
Subtract houses demolished up to June 30th, 1894. ...	52
	15,521
Add new houses built and inhabited to 30th June, 1894.	876
	16,397

The average number of inhabitants per house at the time of the Census was 4·51. As there was some reason to believe that in new property the number of inmates per house was less than this figure, an enumeration was made last autumn as regards 418 new houses in various parts of the town, and it was found that the average number per new house was as nearly as possible 4·1. The course adopted, therefore, has been to multiply the number of inhabited houses built prior to April, 1891, viz., 15,521 by 4·51 = 70,000

And to multiply the number of houses built since that date, viz., 876 by 4·1 ... ... = 3,591

Total 73,591

The estimated population for the year 1894 is therefore taken at 73,600.

At the Census of 1891, the number of uninhabited houses was 1,216, In the middle of 1894, an enumeration by your Inspectors showed 804. This would appear to indicate that at the latter date the number of empty houses was less by 412 than in April, 1891. No correction has, however, been made in this respect, as the difference is believed to be due mainly to the fact that the Census return included many lock-up shops, factories, and offices, in which no one slept on Census night.

In the following Table particulars as to the houses in each ward are set forth :—

1894.	Edgeley.	Heaton Norris.	Middle	Portwood	St. Mary's.	St. Thomas's	Total.
Inhabited houses							
Built before April. 1891	4098	3735	1760	1817	1387	2724	15521
,, since ,, ,,	495	90	..	51	154	86	876
Total	4593	3825	1760	1868	1541	2810	16397
Uninhabited houses as enumerated by Inspectors							804

As no method of "estimating" population is quite free from the possibility of inaccuracy, and as obviously this risk must increase with the lapse of time since the date of the last Census, it is very desirable, if vital statistics are to be of real value, that the Census enumeration should be quinquennial, as in certain Continental and American countries, instead of decennial as at present. In the meantime it is important that a careful yearly enumeration of both the *occupied* and unoccupied houses in each Ward in the Borough be made. Indeed, this will be essential if in future the vital statistics of your rearranged Wards are to be efficiently presented to you, and as the annual survey of the Borough for Poor Law purposes is to be made by the officials of your Rates Department, this valuable information ought to be obtainable with comparatively little trouble.

Marriages.

During the year 1894 the number of marriages was 615, the marriage-rate being equal to 16·7 per 1,000 persons living, as compared with a rate of 13·2 for the year 1893. The Registrar General gives the following marriage-rates (*vide Quarterly Return No. 135 p.* x. *and Annual Summary p.* vi.):—

England and Wales	1894	15·0	per 1,000 persons living
London	,, ...	17·0	,, ,, ,,

Births.

The total number of births registered was 2,306 according to the weekly returns supplied by the sub-registrars. Of these 142, or 6·1 per cent., were illegitimate. The birth-rate was equal to 31·3 per 1,000 persons living, as compared with 32·06 for the year 1893, and with an average rate of 33·8 for the decennium 1884-1893. The highest rate (32·9) was reached in the Middle Ward (where it was lowest in 1893) and in St. Mary's Ward, and the lowest (27·9) in Portwood.

The birth-rate for the whole of England and Wales for the year 1894 was 29·6 per 1,000 of the population (*c*), the lowest rate ever recorded. For the 33 great towns the birth-rate was 30·7, and the 67 other large towns 30·5.

Summary of the Vital and Mortal Statistics of the Borough and each of its Wards for the Year 1894.

WARD.	Acreage.	Estimated population.	Population per acre.	No. of Births registered.	Birth-rate.	Corr'ct'd de'ths *	Corr'ct'd Death rate.	No. of de'ths under 1 year of age *	Inf'nt mortality rate per 1000 births	No. of de'ths from 7 principal Zymotic diseases†	Zymotic Death rate per 1000.	Zymotic death rate per 1000. (excluding Diarrhœa)	No. of de'ths from Diarrhœa. *	Death rate from Diarrhœa per 1000.	No. of de'ths from Consumption. *	Death rate from Consumption per 1000.	No. of de'ths from Other Lung Diseases. *	Death rate from Other Lung Diseases per 1000.
MIDDLE	114	7940	69·6	262	32·9	170	21·4	56	213	19	2·3	0·5	15	1·8	22	2·7	40	5·03
EDGELEY	487	20,490	42·07	664	32·4	345	16·8	99	149	29	1·4	0·2	24	1·1	38	1·8	66	3·2
ST. THOMAS'S	553	12,642	22·8	368	29·1	259	20·4	82	222	17	1·3	0·3	12	0·9	30	2·3	47	3·7
ST. MARY'S.	390	6,890	17·6	227	32·9	132	19·1	41	180	12	1·7	0·4	9	1·3	14	2·03	28	4·06
PORTWOOD	174	8,408	48·3	235	27·9	148	17·6	57	242	11	1·3	0·2	9	1·07	6	0·7	43	5·1
HEATON NORRIS..........	482	17,230	35·7	550	31·9	329	19 09	107	194	30	1·7	0·2	26	1·5	38	2·2	73	4·2
TOTALS.	2200	73,600	33·4	2306	31·3	1383	18·7	442	192	118	1·60	0·31	95	1·3	148	2·01	297	4·03

* Deaths of Stockport residents in the Union Workhouse, Infirmary, and Isolation Hospital are here referred to the Wards in which they lived. Deaths within the Borough of Non-residents from out-townships are excluded. (See following table.)

† The "seven principal Zymotic diseases" are, small-pox, measles, scarlet fever, diphtheria, whooping cough, fever (typhus, typhoid, and continued), and diarrhœa

Deaths.

The total number of deaths registered was 1,434 according to the weekly returns supplied by the sub-registrars, this number being less by 376 than that registered during 1893. Excluding 51 deaths (chiefly in the Workhouse and Infirmary) of persons not usually resident within the Borough, the deaths numbered 1,383, and the death-rate from all causes per 1,000 persons living was 18·7, as compared with a rate of 23·9 for the year 1893, and of 25·4 for the decennium 1884-1893. The highest death-rate (21·4) was in the Middle Ward, and the lowest (16·8) in Edgeley.

The following table gives the annual death-rate per 1,000 (taken from the Registrar General's Reports) for

	POPULATION.	DEATH-RATE.
England and Wales	30 millions	16·6 (*c*)
,, ,, Rural	10 ,,	15·6 (*d*)
,, ,, Urban	20½ ,,	17·1 (*d*)
The thirty-three great towns	10½ ,,	18·1 (*e*)
The sixty-seven other large towns	3½ ,,	16·0 (*f*)

Commenting upon the death-rate (16·6) of England and Wales for 1894, the Registrar-General characterizes it as most remarkable, "being not only the lowest ever recorded, but so much as 1·5 per 1,000 under the lowest previous rate, viz., 18·1 in 1888." The death-rate (18·7) of your Borough was, however, even more exceptional, being as much as 4 per 1,000 below the (so far as I can ascertain) lowest previously recorded rate (22·7 in 1892), and no less than 6·7 per 1,000 below the corrected average death rate (25·4) for the decennium 1884—1893. An examination of the year's statistics shows that this astonishing diminution is mainly attributable to the lessened zymotic mortality, the deaths from this class of maladies being 146, or only about two-fifths of those recorded during the previous year, viz., 375. The diarrhœa death-roll was less than half the length of that of 1893, and your town was comparatively *free* from typhoid fever, measles, whooping cough, and diphtheria, from each of which many deaths are recorded in my last annual report. A substantial decrease of 69 in regard to deaths from "pulmonary consumption (phthisis) and other lung diseases" is also apparent; fatal cases of injury were fewer in number by 16, whilst deaths from miscellaneous causes registered under the heading "All other diseases" were some 60 less than those of 1893.

The most prominent factors of this death rate of 18·7 are in the order of their respective importance (1) Lung Diseases, including Consumption, (2) Infantile Atrophy, Food Marasmus or Wasting, (3) Diarrhœal Diseases of young children. The total number of deaths (442) of children under 1 year of age, chiefly from the above named causes, added 6·0 per 1,000 to the death-rate. All of these causes of mortality are undoubtedly capable of being largely influenced in their prevalence by wholesome surroundings, and by due observance of the laws of health. We are therefore, I believe, justified in hoping that with advancing sanitation and a more widely diffused knowledge of the elementary principles of hygiene the death-rate now recorded may before long lose its present claim to be regarded as exceptionally low.

(*a*) Quarterly Return No. 135, page x., table 2. (*b*) Annual Summary, 1894, page vi. (*c*) Quarterly Return, No, 183, page ix. (*d*) Quarterly Return, No. 185, page ix., table 3. (*e*) Annual Summary, 1894, page iii. (*f*) Annual Summary, 1894, page xvi.

Age and Sex in relation to the Year's Mortality.

The number of deaths amongst infants under one year of age was 442, constituting 30·8 per cent. of the total number of all deaths, as compared with the figures 527 and 29·1 for the year 1893. This mortality is very excessive, and I shall again have occasion to refer to it. The deaths of children between 1 and 5 years numbered 119, or 8·2 per cent. of all registered, the mortality of the first quinquennium amounting to 39·1 per cent. of that at all ages. The deaths in the 20-years age-period of 5—25 were only 119 being exactly equal to the number which occurred between 1 and 5. 479 deaths, or a percentage on the total of 33·4, occurred between 25 and 65, whilst above 65 the deaths registered were 275, being equal to 19·1 per cent. of the year's mortality.

It is apparent from the foregoing figures that mortality differs widely at different ages. It also differs considerably in the two sexes, being higher amongst males at nearly all ages. General death-rates calculated without regard to the age and sex constitution of a community possess accordingly little *comparative* value, as it is clear that a community containing, for example, a larger than average proportion of females and of young adults and a smaller proportion of males and old people will almost necessarily show a lower general death-rate than a town in which the average age and sex constitution prevails, even if both towns be, in the words of Dr. Ogle, "on a perfect equality with each other as regards their climate, their sanitary arrangements, their closeness of aggregation, as also the habits and occupations of their inhabitants." I have therefore prepared the following

TABLE SHOWING THE AGE AND SEX, CONSTITUTION OF THE POPULATION AND THE REGISTERED MORTALITY OF STOCKPORT FOR THE FOUR YEARS 1891-4 INCLUSIVE.

1891.

Age Periods.	Persons.		Males.		Females.	
	Census.	Deaths.	Census.	Deaths.	Census.	Deaths.
All Ages	70263	1884	32789	984	37474	900
Under 1	1824	522	888	300	936	222
1 and under 5	6384	305	3188	153	3196	152
Total under 5	8208	827	4076	453	4132	374
5 and under 15	15370	78	7598	38	7772	40
15 ,, 25	19873	63	9017	35	10856	28
25 ,, 45	14267	263	6614	132	7653	131
45 ,, 65	10094	356	4439	175	5655	181
65 and upwards	2451	297	1045	151	1406	146

1892.

Age Periods.	Persons.		Males.		Females.	
	Estim'd Popul'n.	Deaths.	Estim'd Popul'n.	Deaths.	Estim'd Popul'n.	Deaths.
All Ages	71300	1617	33264	853	38036	764
Under 1	1846	463	898	273	948	190
1 and under 5	6476	186	3231	104	3245	82
Total under 5	8322	649	4129	377	4193	272
5 and under 15	15600	70	7711	42	7889	28
15 ,, 25	20171	66	9151	31	11020	35
25 ,, 45	14478	208	6711	108	7767	100
45 ,, 65	10248	342	4507	170	5741	172
65 and upwards	2481	282	1055	125	1426	157

1893.

Age Periods.	Persons.		Males.		Females.	
	Estim'd Popul'n	Deaths.	Estim'd Popul'n	Deaths.	Estim'd Popul'n	Deaths.
All Ages	73000	1745	34058	864	38942	881
Under 1	1891	525	920	292	971	233
1 and under 5	6630	252	3308	134	3322	118
Total under 5	8521	777	4228	426	4293	351
5 and under 15	15971	75	7894	43	8077	32
15 ,, 25	20652	78	9370	37	11282	41
25 ,, 45	14823	236	6871	115	7952	121
45 ,, 65	10493	309	4615	129	5878	180
65 and upwards	2540	270	1080	114	1460	156

1894

Age Periods.	Persons.		Males.		Females.	
	Estim'd Popul'n.	Deaths.	Estim'd Popul'n.	Deaths.	Estim'd Popul'n.	Deaths.
All Ages	73600	1383	34338	690	39262	693
Under 1	1905	438	927	257	978	181
1 and under 5	6685	118	3335	65	3350	53
Total under 5	8590	556	4262	322	4328	234
5 and under 15	16102	55	7959	31	8143	24
15 ,, 25	20821	61	9446	22	11375	39
25 ,, 45	14947	204	6929	96	8018	108
45 ,, 65	10579	248	4653	105	5926	143
65 and upwards	2561	259	1089	114	1472	145

From the foregoing data has been constructed the following

TABLE EXHIBITING, FOR THE YEARS 1891-4 INCLUSIVE, THE MORTALITY PER EACH 1,000 PERSONS LIVING IN STOCKPORT AT ALL AGES, WITH SIMILAR INFORMATION IN REGARD TO THE PERSONS OF EACH SEX LIVING IN THE SAME AGE-GROUPS.

		All ages	Under 1	1 to 5	Under 5	5 to 15	15 to 25	25 to 45	45 to 65	65 and Upwards
1891	Persons	26·8	286·1	47·7	100·7	5·07	3·1	18·4	35·2	121·1
	Males..	30·01	337·3	47·9	111·1	5·0	3·8	19·9	39·4	144·4
	Females......	24·01	237·1	47·5	90·5	5·1	2·5	17·1	32·0	103·8
1892	Persons	22·6	250·8	28·7	77·9	4·4	3·2	14·3	33·3	113·6
	Males	25·6	304·0	32·1	91·3	5·4	3·3	16·09	37·7	118·4
	Females......	20·08	200·4	25·2	64·8	3·5	3·1	12·8	29·9	110·09
1893	Persons	23·9	277·6	38·0	91·1	4·6	3·7	15·9	29·4	106·2
	Males.........	25·3	317·3	40·5	100·7	5·4	3·9	16·7	27·9	105·5
	Females	22·6	239·8	35·5	81·7	3 9	3·6	15·2	30·6	106·8
1894	Persons	18·7	229·9	17·6	64·7	3·4	2·9	13·6	23·4	101·1
	Males.........	20·09	277·2	19·4	75·5	3·8	2·3	13·8	22·5	104·6
	Females	17·6	185·07	15·8	54·06	2·9	3·4	13·4	24.1	93·5

Perhaps the most obvious features of this table are the enormously high death-rates in the first year and in the first five years of life, the slight mortality between the ages of 5 and 25, and the marked excess of deaths amongst males in almost every age period, but especially during the first quinquennium.

The deaths which occurred within the district of persons not belonging thereto may be thus tabulated :—

Place of Death.	From Hyde	From Brinnington	From Chead'e Hulme	From Cheadle	From Poynton	From Bosden	From Heaton Chapel	From Reddish	From Macclesfield	From Birkenhead	From Glasgow	From Gee Cross	From Stafford	From Compstall	From Manchester	From Marple	From Bramhall	From Handforth	From Woodley	From Gorton	From Bredbury	TOTALS.
Union Workhouse	17	2	..	2	..	1	1	6	..	1	1	..	1	..	..	3	2	..	1	..	1	39
Infirmary		..	..	..	1	..	..	..	1	..	..	1	..	1	1	..	..	1	..	2	..	8
Elsewhere	1	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	4
Totals...	18	2	1	2	1	1	1	7	1	1	1	1	1	1	1	3	3	1	1	2	1	51

The deaths in the public hospitals of persons belonging to Stockport exhibit the following ward distribution :—

	Middle	Edgeley	St. Thomas'	St. Mary's	Portwood	Heaton Norris	TOTALS
Union Workhouse...	31	31	21	8	14	27	132
Infirmary	3	7	11	5	3	6	35
Isolation Hospital ..	1	1	2	2	3	1	10
TOTALS....	35	39	34	15	20	34	177

For purposes of comparison with the vital statistics of Stockport I have excerpted from the Registrar General's Annual Summary for 1894, p. xxv, &c., the following figures relating to England and Wales, the two groups of "large towns," and to eleven individual northern factory towns, the general conditions of life in which are somewhat similar, and which probably do not differ greatly in regard to age and sex constitution of their population.

	Birth-Rate.	Death-Rate.	Zymotic Death-Rate.	Deaths of Infants under 1 year to 1,000 births.
England and Wales	29·6	16·6	1·76	137
The 33 Great Towns....... ..	30·7	18·1	2·44	152
The 67 Other Large Towns	30·5	16·0	1·69	143
St. Helens	37·4	17·8	2·54	162
Wigan...	37·8	19·4	2·58	164
Warrington	39·6	17·4	2·58	125
Bury	26·1	18·2	1·86	143
Ashton-under-Lyne	29·1	19·2	1·27	161
Rochdale	23·9	17·4	1·69	125
Bolton..............	31·5	18·8	1·82	162
Blackburn	28·8	17·9	1·60	169
Preston	32·1	20·8	2·61	217
Huddersfield	20·2	15·8	1·45	160
Halifax	23·1	16·5	0·87	135
Stockport.............	**31·3**	**18·7**	**1·64**	**192**

Uncertified Deaths.

There were 14 uncertified deaths during the year, of which 9 occurred in Portwood, 3 in St. Mary's, 1 in St. Thomas's, and 1 in Edgeley.

Coroners' Inquests and Certificates.

83 inquests were held during the year, viz., 68 by Mr. Coroner Newton, and 15 by Mr Coroner Price, who also issued in four instances a certificate dispensing with a formal investigation. The following is a summary of the verdicts resulting from these inquiries:— Manslaughter, 1: suicide, 4: accident, 30: suffocated while in bed with parents or others, 3: found dead 1: disease aggravated by neglect by others, 1: excessive drink, 1: want and exposure, 2: want of attention at birth, 7: natural causes, 32: other causes, 1.

I am indebted to Messrs. Newton and Price for this information.

Infantile Mortality.

The deaths of children under 1 year of age were 442, or nearly 31 per cent. of the total number of deaths at all ages during the same period. The number of births was 2,306, and consequently infantile mortality was at the rate of 192 per 1,000 births as compared with a rate of 225 in 1893. At first sight this appears to be a most hopeful decrease, but the following figures from the Registrar General's returns exhibit a similar reduction in regard to the country generally and its large towns during the exceptional year under notice:—

DEATHS UNDER 1 YEAR PER 1000 BIRTHS.

	1893	1894
England and Wales	159	137
33 Great Towns	181	152
67 other Large Towns	—	143

The infantile mortality rate (192) in your borough is therefore far above the average, and in point of fact is specially mentioned by the Registrar General as being the highest but one recorded in any of "The Sixty-seven Other Large Towns." You will also observe that it holds the same unenviable position in regard to the 11 northern factory towns whose statistics I have tabulated on page 17. In my last Annual Report I dealt at some length with the causes of this potent factor of your general death-rate, and in continuation of that inquiry have extended, by the inclusion of last year's figures, the tabulated analysis of the causes of infantile mortality then submitted to you, the result being to confirm and accentuate the deductions set forth on pages 14-17 of my 1893 report. As was then pointed out, the chief causes of infantile mortality are in the order of their importance evidently these:—

(1) Prematurity and Want of Vitality at Birth.
(3) Diseases of the Respiratory Organs.
(3) Diarrhœal and Digestive Disorders, mainly due to errors of diet and insanitary conditions of residence.

Analysis of the Causes of Infant Mortality in Stockport.

For the 6 years—1889 to 1894 inclusive.

CAUSES.	1st day.	2nd day.	3rd day.	4th day.	5th day.	6th day.	7th day.	1st week.	2nd week.	3rd week.	4th week.	Under 1 month.	1 month, and under 2	2 months, and under 3	3 months, and under 4	4 months, and under 5	5 months, and under 6	6 months, and under 7	7 months, and under 8	8 months, and under 9	9 months, and under 1	10 months, and under 1	11 months, and under 1	TOTAL.
Premature birth and congenital malformation	74	17	10	8	4	2	3	118	20	11	3	152	7	8	2	4	2	3	2	1	..	..	2	183
Debility, low vitality, inanition, asthenia, marasmus, atrophy.	73	29	25	4	5	6	7	149	48	56	16	269	107	73	69	48	33	15	24	10	10	11	8	677
Respiratory diseases (including pulmonary tuberculosis) ...	8	..	1	...	1	...	...	10	12	6	4	32	59	64	69	70	72	56	69	58	51	76	42	718
Diarrhœa and other gastro-intestinal maladies	...	...	. .	. .	...	...	1	1	5	10	5	21	48	65	65	69	64	30	39	35	27	14	13	490
Tabes Mesenterica and tubercular peritonitis	...	...	..	..	..	...	. .	...	...	..	...	...	3	2	4	6	9	7	3	4	3	3	.	44
Dentition	...	...	..	..	. .	...	...	...	...	...	...	..	...	...	1	5	12	15	20	19	14	16	14	116
Convulsions and nervous diseases	19	13	8	7	5	1	2	55	11	16	3	85	41	46	31	24	24	11	7	7	10	8	8	302
Meningitis (including Tubercular)	...	...	..	...	...	...	..	. .	..	.	...	..	2	10	6	14	13	13	15	10	8	3	7	101
Zymotic diseases— w.—Whooping cough. D.—Diphtheria. c.—Membranous croup. sc.—Scarlet fever. M.—Measles. E.—Erysipelas.	...	..	..	..	...	...	. .	..	...	1.w 1.D	2.w	3.w 1.D	3.w 1.E	8.w	1.w 2.M	7.w 2.M 1.E	8.w 1.Sc 2.M 1.E	10.w 5.M	6.w 1.c 5.M	12.w 1.D 1.c 1.Sc 6.M	8.w 2.D 14.M	9.w 17.M	12.w 1.c 2.Sc 11.M	87.w 4.D. 3.c 4.Sc 64.M 3.E 165
Suffocation = s. Injury = I. Overlain = o.	1.I 1.s	1.I	...	1.s			..	2.s 2.I	1 s 1.I	...	.	3.s 3.I	5.s 3 o	2.s 1.o	2.s 1.I	2 s	1.o	..	1.I	..	...	1.s	...	15.s 5.I 5 o 25
Other causes.	5	1	...	...	..	3	1	10	5	4	3	22	17	11	9	4	6	4	2	4	5	3	1	88
Totals ...	181	61	44	20	15	12	14	347	103	105	36	591	296	290	262	256	248	169	194	169	152	161	121	2909

Total Number of Births during years 1889 to 1894 inclusive - 13,759.

Deaths from "other causes" included *inter alia*:—23 inherited syphilis, 16 during first three months: 8 icterus, five being in first month: 5 atelectasis: 2 intussusception, 5th and 7th months: 3 tubercular peritonitis, 5th and 9th months; 1 volvulus, 5th month: 1 prolapsus recti, 10th month: 1 endocarditis (verified P.M.), first month: 1 hæmorrhage umbilical cord, 2nd day: 3 inflammation umbilicus, 1st month.

Many believe that the following are also important factors amongst those responsible for the evil under consideration :—

(4) The high birth-rate and the early improvident marriages so common in factory towns.

(5) Administration of narcotics.

(6) Infant life insurance.

The influence of each of these causes with one exception was discussed in my 1893 report, and I will now only refer to No. 4. In a recent elaborate essay on "The Perils and Protection of Infant Life," Dr. H. R. Jones, of Liverpool, has shown that though no relation exists between the general birth-rate and the rate of infant mortality, a local relation is discoverable in northern towns of over 10,000 inhabitants. A high birth-rate was found to be associated with a high rate of infant mortality. Dr. Jones attributes this largely to overcrowding of population, while Dr. T. W. Grimshaw, Registrar General for Ireland, associates it with the fact that married women working in mills are unable to nurse their own children, and are therefore *more liable to frequent pregnancies*, while their children, not having the proper amount of maternal care, are more liable to disease and death than the children of country mothers. It is rather curious, however, that during the years in regard to which I have examined the Stockport death returns the relation of the birth-rate to the rate of infant mortality is not in accordance with that described by Dr. Jones as characteristic of northern towns ; in fact so far as the subjoined figures go they point on the whole rather to an opposite conclusion :—

YEAR.	1889	1890	1891	1892	1893	1894
Birth-rate ..	34·1	32·8	33·3	32·6	32·06	31·3
Infantile Mortality	190	233	224	199	225	192

As summarised last year the remedial measures which suggest themselves include the following :—

(1) The removal of preventable causes of prematurity and of the want of vitality of infants at birth, *e.g.*, by prohibiting the employment in mills of women advanced in pregnancy.

(2) The prevention of subsequent maternal neglect by limiting *where practicable* the employment of nursing mothers in factories, and by diffusing instruction in the elements of infant hygiene.

(3) The abatement of insanitary conditions of residence.

You are probably aware that there are those who urge further limitation of the employment of nursing mothers in factories as *the* panacea for infant mortality. In Stockport there were in December 1894, according to the returns kindly furnished by the employers of labour in the borough, from 7,000 to 8,000 women engaged in the various cotton and hat factories, and of these about 27 per cent. are married and most of them are of the childbearing age. It cannot be disputed that factory labour usually interferes to a greater or less extent with breast feeding, and necessitates at least partial hand-feeding. Infants are thus too often placed between the Scylla of foul feeding-bottles and the Charybdis of sweetened bread-and-water pap, to which in some cases more or less milk is added, the resulting indigestible mixture being popularly known as "pobs" or "pobbies." That such gross errors of diet are directly responsible for an immense number of infant deaths has been conclusively proved by the investigation of Drs. Hope and H. R. Jones, of Liverpool. I have, however, already recorded my belief that there is a tendency to attach an exaggerated importance to the consequences of the employment of nursing mothers in factories, that prohibition is even more desirable for women advanced in pregnancy, and that under existing social and economic conditions extension of the present period of prohibition (one month after confinement) is impracticable. Towards the end of last year a deputation waited upon the late Home Secretary on behalf of the British Medical Association to urge the desirability of extending this period to three months, as infants would then have the chance of getting a good start in life, and would thus be better able to contend against illness. Mr. Asquith sympathised with the objects of the deputation, and anticipated a time when the employment of married women in factories at all will be entirely discontinued. He, however, expressed himself unable to admit as a scientific conclusion, that such employment is the sole cause, or even the chief cause, of the increase in infant mortality, which he states has undoubtedly taken place, according to figures provided by the Registrar General in regard to 28 large towns during the last nine years. These statistics show that this increase is highest in non-manufacturing towns, in which no considerable proportion of mothers work in factories. Mr. Asquith apprehended that withdrawal of the mother's earnings would in many cases entail a corresponding diminution of nourishment and comfort, with consequent emaciation and wasting, and further pointed out that the suggested extension of the period of prohibition after confinement would result in the loss of employment to many workers, employers being unwilling or unable to keep a place open for so long as three months. This question was specially considered in January and February last at the Society of Medical Officers of Health by members representing a number of large Lancashire factory towns and the County Councils of Cheshire and Lancashire, and with one exception the speakers were unanimous in regarding the suggested extension as quite impracticable from the point of view of both operatives and employers. A strong belief was also expressed that the sub-committee of the British Medical Association appointed to consider the matter had reported that they could not see their way owing to practical difficulties to recommend that the month's enforced absence from work after the birth of a child should be extended to three months. It is therefore not quite easy to understand why the late Home Secretary was expected to legislate in this direction.

Personally, I cannot help thinking that insanitary conditions of residence and especially of excrement disposal may constitute quite as potent a factor of infantile mortality as female factory labour. The number of mothers so employed in 1893 probably did not differ appreciably from that in 1894, and yet in the former year the rate of infant mortality was 33 per 1,000 births greater, the explanation apparently being that the long continued heat and drought of 1893 greatly aggravated insanitary conditions of residence, and thereby greatly increased the infant mortality.

In thinking over the various measures proposed for checking this mortality in factory towns, it appeared to me that hitherto the matter has been considered from a too purely medical, theoretical, and utopian point of view. I therefore visited some thirty of the largest mills in Stockport, and conversed at length with many proprietors, managers, overlookers, and operatives, with a view of ascertaining the opinions and experience of those who are intimately familiar with factory administration and are best acquainted with the habits and inclinations of the operatives. I have taken down their answers to certain questions submitted in each case, and have gleaned the following information :—

> (*a*) "That in many cases, when an overlooker thinks a woman advanced in pregnancy is too near her confinement to be at work, he gives her a hint to go home. In numerous instances, however, the overlooker cannot tell, or is deceived by the woman's statement. Other firms consider it no business of theirs to interfere, especially if the woman be a good hand, and the result is that it is not a very uncommon thing for a woman to he confined within a few hours of leaving the mill. I was told of two cases in which a female was carried out of the mill in labour, and of two others in which they were actually confined in the mill; one of these, however, being a weaver who received a blow in the abdomen from the picking-stick of a loom.
>
> (*b*) Many proprietors and managers, and nearly every overlooker with whom I conversed, were unaware that the employment of a woman in a factory within four weeks of having given birth to a child was forbidden by law, though in many mills a rule of their own to the same effect was enforced as far as possible. Most of the overlookers think it possible to enforce this rule fairly well amongst the operatives under their own charge, as each confinement is gossiped about by the woman's fellow-workers; but they were all agreed that it could be far more easily and efficiently put in force if, as I have suggested, every confinement were officially notified at the mill by the registrar of births. This would, of course, necessitate much more prompt registration than is at present required, accompanied by a declaration as to the mother's employment. At one mill it was stated that the overlookers had "enough to do to mind their own business," without enquiring whether each recently-confined woman had been away four weeks. All were agreed that to prevent such women obtaining work before the expiration of this period, at a mill at which they were not previously known, it would be necessary that all adult female applicants should, as a matter of routine, make a suitable declaration when applying for work.

(*c*) With regard to the possible loss of situation that might be entailed by a three months' period of prohibition, opinions vary considerably. I was informed that in some cases, even at present, any woman leaving to be confined loses her "shop" as it is called. In others, it will be kept open for her if she can provide an equally good substitute, who is then known as her "sick-worker." Many overlookers, however, object to "sick-workers," who often take little interest in their work, and will leave at a moment's notice if a permanent situation offer. When trade is brisk it is not always easy to get a "sick-worker," and therefore much depends on the condition of business, and also, as I was repeatedly told, on the individual value, as a worker, of the absent woman.

(*d*) In regard to the suggestion which has been made, that in connection with each mill a room be provided to which nursing-mothers who live too far away to go home during the dinner-hour could have their children brought to them, the opinion of employers and overlookers was unanimously against its practicability, as in such cases it might not be possible for the mothers to arrange for the children to be brought from a distance, and that even if it were they would not take the trouble. I may here mention that a man who had been a manager in a cotton mill in Bombay informed me that the native women there bring their infants into the mill work-rooms with them, and suckle them at any convenient interval.

(*e*) Almost invariably in the negative was the reply to the question, "Do you think that the operatives in each large mill, or in several contiguous mills, would be willing to provide and maintain (or if provided for them in the first instance, to maintain subsequently) a proper regulated day nursery, to a large extent under their own control?" The reason given was that in many cases, the number of which is constantly increasing, the women come long distances to work, and are not likely to carry their infants any further than they can help, and so prefer to take them to a neighbour. Further, there is a very distinct preference amongst the female operatives to leave the child with some woman whom *they know personally*. I was impressed with the frequency of this answer.

The results of my inquiries have very strongly convinced me that any immediately successful attempt to ensure the better care of infants must be of a nature to adapt itself to existing conditions, rather than to suddenly dislocate the deep-rooted customs and prejudices of factory operatives. I venture therefore to suggest that the most practicable way of checking the existing evils is to extend to women who now receive children by the day the provisions of the Infant Life Protection Act of 1872, which at present apply only to women who receive two or more children for more than twenty-four consecutive hours. Any respectable woman who possessed a good clean house. and could produce a medical man's certificate as to her fitness to handfeed a baby properly, might obtain an annual license without further trouble or expense, and would then be under the supervision of the sanitary officials, police, and officers of the Society for Prevention of Cruelty to Children. For serious neglect of, or for failure to provide proper food and attention for the infants entrusted to her, as well as for allowing her house to become unfit for their reception, the penalty would be forfeiture of the license, as provided by Section 7 of the Act quoted; and no woman without a license should be allowed to receive any child to whom she did not stand in very close relationship, *e.g.*, as grandmother or aunt. A further provision of this Act, which might well be extended to all infants under one year of age, enacts that the coroner shall, within twenty-four hours, be notified of the occurrence of every death, and shall hold an inquest in regard thereto, unless a registered medical practitioner's certificate in respect thereof be produced to him.

In putting forward this suggestion I am, of course, aware that such a system might be hampered by very considerable administrative difficulty, and that official interference and supervision might give rise to great resentment amongst those whose children it was desired to benefit.

The more one thinks, however, of the essential difficulties which operate against and render nugatory the best-intentioned attempts to limit this evil by active administrative measures, the more difficult and almost hopeless the problem appears; and one is almost forced to the conclusion that the one great remedial measure to which we must look is the gradual diffusion of the principles of the hygiene of infant life amongst the class whose children now perish in such enormous numbers. School instruction on this subject is highly desirable, and is, perhaps, specially necessary in communities in which women are from an early age engaged all day in factories, and therefore, some think, less likely to acquire the knowledge and habits of good housewives.

Zymotic Disease.

The most striking feature of the year's history was the greatly diminished prevalence of zymotic disease and the remarkable reduction of mortality from this cause. The number of cases reported under the Notification Act of 1889 was 421, as compared with 683 in 1893, and a yearly average of 410 since the enforcement of the Act in February, 1890. The decrease of 38·6 per cent. on the previous year's returns is due to the fact that in 1894 the occurrences of "fever" and diphtheria were respectively 75 per cent. and 42·5 per cent. fewer, and there was also a perceptible reduction in the notifications of scarlet fever. As regards non-notifiable zymotics, a singular freedom from measles and whooping cough must be recorded, only 4 deaths having been referred to these causes, as compared with 70 in the previous year. Deaths from diarrhœa were 50 per cent. fewer, but were, nevertheless, much too numerous. Finally influenza was returned as the cause of death in 8 cases during the first 10 months of the year.

The death-rate from the "Seven Chief Zymotic Diseases"* was equal to 1·64 per 1,000 persons living (as compared with 4·8 in 1893), and of this figure diarrhœa was responsible for 1·3. The same rate for England and Wales was 1·76, for the 33 Great Towns 2·44, and for the 67 Other Large Towns 1·69.

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* Smallpox, measles, scarlet fever, diphtheria, whooping cough, "fever," (typhus typhoid, and continued) and diarrhœa.

Infectious Disease (Notification) Act, 1889.

CASES REPORTED DURING THE YEAR 1894.

	Small pox.	Scarlet Fever	Diphtheria	Membranous Croup	Typhus Fever	Typhoid Fever	Continued Fever	Relapsing.	Puerperal Fever	Cholera	Erysipelas
January	..	14	2	3	...	...	1	...	...	...	5
February	...	25	2	2	...	2	...	...	2	...	5
March ...	...	21	3	6	...	5	1	..	1	...	4
April	3	19	...	...	...	...	...	...	1	...	2
May ...	2	16	2	...	...	...	...	...	2	...	8
June	13	34	1	...	...	1	...	...	...	...	5
July	15	20	5	...	...	5	...	...	1	...	3
August ...	1	18	1	1	...	18	...	...	2	..	5
September	...	26	...	1	...	12	..	...	...	...	6
October	...	12	1	...	..	8	...	...	..	...	5
November	...	13	2	1	...	4	...	...	...	...	6
December	...	11	1	...	...	2	..	...	...	..	2
Totals ...	34	229	20	14	...	57	2	...	9	...	56

Smallpox.

Thirty-five cases of this disease occurred in the Borough during the year, in addition to two cases which were sent to your hospital from Hazel Grove for treatment.

In the appended table are briefly set forth the results of inquiry into these cases, including a record of the condition in regard to vaccination of each sufferer :—

Fourteen of these 35 cases were, as far as I could ascertain, separate and independent introductions of the disease, 12 of the sufferers were either tramps or inmates of common lodging-houses frequented by tramps, 1 was an itinerant ice-cream vendor, 1 was a grocer whose shop was close to, and was frequented by the inmates of, common lodging-houses.

Case 7 was a navvy who had been tramping various parts of the country seeking employment, and who had recently obtained it at your Sewage Outfall Works, Cheadle Heath. Accompanied by the Medical Officer of Health for the district (Dr. J. H. Godson) I at once visited and inspected the many other labourers employed there, and impressed upon each the expediency of submitting to revaccination.

Case 15 was that of a young man who twelve days before spent a holiday in Liverpool, and probably contracted the disease there.

Case 16 was presumably infected by case 15, as it was ascertained that about a fortnight previously this sufferer was in a medical man's surgery when Case 15 came there suffering from smallpox, to seek advice.

Case 19 (fatal) was that of an exceptionally fine unvaccinated child about a year old, and Case 20 was the aunt of this child. Both of them probably contracted the disease from the child's father, who appears to have had an unrecognized attack of smallpox some weeks before.

The receipt of an anonymous letter directed to the Town Clerk stating that "loathesome disease" existed at 47, Wood Street, led to the detection of the group of Cases 22 to 28. Case 23, a boy 8 years of age, was found to be suffering from smallpox. He was at once removed to hospital, and when the other members of the family were being bathed at your disinfecting station it was seen that two of them (Cases 22 and 24) exhibited traces of an eruption which on examination proved to be that of smallpox. It was then found that about three weeks before Case 22 had had an attack of what was regarded as chickenpox, but had not sought medical advice, and had after a few days resumed attendance at school and mill as a half-timer. Further enquiry in Wood Street led to the detection and isolation of Case 25. I then made a house-to-house visitation of Wood Street and the adjoining courts, assisted by Mr. Littler, F.R.C.S., and your Inspectors, and every inmate was offered the protection of revaccination with calf-lymph. A few days later Case 26 was notified, the patient to avoid going to hospital having betaken herself from Wood Street to a house in Bowdon Street, Edgeley. When accidentally discovered and reported by a medical man she disappeared, secreted herself in a house in Queeney's Court, St. Petersgate, and being traced there refused at first to admit your Inspectors, but they eventually succeeded in removing her to hospital. Case 27 was that of a next-door neighbour of Cases 22, 23, and 24, was one of those who persistently refused to be revaccinated, and paid for her resolve by having a severe attack of confluent smallpox. Case 28 had been a frequent visitor at No. 47, Wood Street.

In connection with the suppression of this outbreak some trouble was experienced in dealing with an old man who was living in one of the infected houses. As soon as smallpox was discovered in his house he disappeared, but was traced to a tap-room in the vicinity. Although the landlord and many of the customers protested against his presence he only consented to leave after being threatened with arrest, and being then given the alternative of close confinement to his own house or bathing and disinfection, he chose the latter. Surely it is most desirable, as such a case shows, that the Sanitary Authority should possess the power to summarily remove and disinfect any selfish and ignorant individual who by such conduct recklessly endangers valuable lives.

The final group of cases (Nos. 29-35) appears to have been an extension of the Wood Street outbreak, and, like that, originated from one slight unrecognised attack. Case 30, the first of this group notified, was in due course removed to hospital, and whilst the other inmates of the same house were being bathed, one of them (Case 29), who was a winder in a large thread works in Hillgate was seen to be recovering from unrecognized modified smallpox, and it transpired that for two or three days before and after the eruption appeared she had been too ill to go to work. Her companion and fellow-worker (Case 31) was then stated to have been similarly ill, and on being visited was found to be also suffering from modified smallpox. It was subsequently ascertained that both of these patients had, about a fortnight before falling ill, visited a house in King Street West (near Wood Street) which was frequented by inmates of one of the infected houses in Wood Street. The remaining five persons attacked (Nos. 31-35) were young women employed in the winding room of the same mill, and with the exception of No. 35 suffered from the disease in its mildest form.

In reviewing the Wood Street and Hillgate outbreaks, and bearing in mind that in both instances cases of unrecognised smallpox had been freely and intimately mixing with the community in mills, in a school, and elsewhere, for two or three weeks prior to their detection, it is undoubtedly a matter for surprise and congratulation that the consequences were not far more disastrous and widereaching. This was in part, but certainly not altogether, the result of the energetic preventive measures which you again so promptly and wisely sanctioned, and which were precisely the same as those adopted by you with so much success in 1893. There can, however, I think, be little doubt that the degree of infectivity of the disease is much greater in some epidemics than in others. In an outbreak in East Kent, in 1892, of which I have personal knowledge, the disease was imported from Alexandria, and the Medical Officer of Health (Dr. M. K. Robinson) and myself were impressed with its intense virulence, the malady appearing to attack nearly every unprotected person who came in contact with it; quite obviously, on the other hand, infectivity cannot have been in any way intense in the Stockport outbreaks under notice. Another important factor in determining the extent of an epidemic is the condition of the exposed population in regard to protection by vaccination, and this appears to be fairly good in your Borough, if the records on the accompanying table may be taken as a guide. In addition to frequently modifying the concurrent symptoms, efficient vaccination specially tends to reduce the profuseness of the eruption, and therefore probably the *quantity* of infectious matter likely to be disseminated. Perhaps it may also be that vaccination affects the *quality* of the virus, reducing its intensity.

In last year's report I commented upon the large extent to which vagrancy had been responsible for the introduction of smallpox into your Borough, the Common Lodging-houses and the Casual Ward of the Workhouse being practically open channels through which the disease entered the town. In 1894 the same conditions again obtained and were combated as before by vigilant daily and nightly inspection of the lodging-houses for nine weeks, together with medical examination of all casuals by Dr. W. B. Bale, the Workhouse Medical Officer, to whom thanks are due for this valuable assistance. This method of dissemination of smallpox and other diseases was, moreover, so manifest and widespread throughout the whole

No.	Date 1894.	Age	Address.	Condition in regard to Vaccination.				Type of Disease.	Days in Hospital.	Result.	Remarks.
				No of Marks.	Size.	Quality.	Foveated ?				
1*	April 10	17	Vale street Lodging House.	2 primary.	Each 1s.	Good.	No.	Discrete.	22	Recovery.	Tramp.
2*	,, 16	47	Fletcher's ct., John street.	2 primary.	Each 6d.	Fair.	Slightly.	Semi-confluent.	26	Recovery.	Inmate of Vale Street Lodging House.
3*	,, 22	55	Vale street Lodging House.	2 primary.	Each 1s.	Moderately good.	Slightly.	Discrete.	34	Recovery.	Traceable to case 1.
4*	May 8	45	Newbridge lane.	3 primary.	Each 3d.	Faint.	Slightly.	Semi-confluent.	45	Recovery.	Source not clear. Habits irregular and vagrant.
5*	,, 9	54	Workhouse.	3 primary.	Each 6d.	Distinct.	No.	Mildest discrete.	54	Recovery.	Tramp. Was re-vaccinated at Workhouse shortly before attack, but it did not take.
6	June 3	21	Middle Hillgate.	2 primary.	6d. and 3d.	Faint.	Slightly.	Confluent.	26	Recovery.	Itinerant ice cream vendor.
7	,, 8	39	Newton's Whim.	4 primary.	Each 3d.	Very faint.	..	Discrete.	17	Recovery.	Source not clear. Was a recently-hired navvy on sewerage works and had slept at common lodging-houses.
8*	,, 9	27	Workhouse.	1 primary	Very small	Very faint.	..	Severe confluent	17	Recovery.	Tramp.
9*	,, 9	34	Higher Hillgate and Adswoood lane W.	None.	..	..	..	Severe confluent.	6	Death.	Kept a shop close to, and served inmates of, Vale Street Common Lodging House.
10*	,, 22	18	Workhouse.	2 primary.	Each 6d.	Fair.	No.	Discrete.	24	Recovery.	Tramp.
11*	,, 29	29	Vale street Lodging House.	..	..	..	..	Discrete.	13	Recovery.	Associate of tramps. States he was successfully vaccinated and also re-vaccinated on entering Militia, but no marks visible.
12	,, 29	6m	Kettle's court.	None.	..	..	..	Semi-confluent.	25	Recovery.	Mother frequented Vale Street Lodging House.
13*	July 10	19	Workhouse.	..	..	..	..	Abortive.	15	Recovery.	Tramp.
14*	,, 21	59	Workhouse.	2 primary.	Each 6d.	Faint.	Faintly.	Semi-confluent.	51	Recovery.	Tramp.
15	June 6	24	Little Egerton street.	2 primary.	6d. and 3d.	Faint.	Slightly.	Discrete.	24	Recovery.	Probably contracted disease in Liverpool 12 days before.
16	,, 26	15	Hatton street.	None.	..	..	..	Confluent and very severe.	30	Recovery.	Traceable to case 7. A pustule formed on this patient's left eyeball.
17	,, 8	35	Temple Bar.	2 primary.	Each 3d.	Very faint.	..	Confluent and very severe.	45	Recovery.	Source not clear. Habits very irregular.
18	,, 23	26	Jacques street.	3 primary.	Each 1s.	Good.	Yes.	Discrete.	9	Recovery.	Traceable to case 9.
19	,, 11	1	Edwin street, Hall street.	None.	..	..	..	Confluent.	7	Death.	Some 2 or 3 weeks before this child sickened, its father was very ill for a week or more with symptoms like those of small-pox. An eruption also appeared, but he sought no advice, and his condition passed unrecognized.
20	,, 11	35	Edwin street, Hall street.	6 primary.	Each 1s.	Good.	Yes.	Greatly modified.	9	Recovery.	Probably contracted in same way as case 14.
21	,, 29	26	Churchgate.	3 primary.	Each 6d.	Faint.	Slightly.	Confluent.	27	Recovery.	Source not clear. Possibly contracted the disease in Manchester, where he had been seeking work.
22	July 4	13	47 Wood street.	..	..	..	..	Discrete.	3	Recovery.	Had been suffering from unrecognized smallpox for 3 to 4 weeks previous to detection, but source whence contracted could not be traced.
23	,, 4	8	47 Wood street.	3 primary.	Each 1s.	Good	Yes.	Very modified.	14	Recovery.	Contracted from case 19.
24	,, 4	36	47 Wood street.	3 primary.	1s., 6d., 3d.	Faint.	Faintly.	Discrete.	22	Recovery.	Contracted from case 19.
25	,, 4	27	44 Wood street.	3 primary.	..	Faint.	Slightly.	Confluent.	34	Recovery.	Contracted from case 19.
26	,, 12	21	Off Wood street.	3 primary.	6d., 6d., 3d.	Fair.	Slightly.	Discrete.	20	Recovery.	Contracted from case 19.
27	,, 22	34	45 Wood street.	3 primary.	Each 6d.	Faint.	Slightly.	Confluent.	26	Recovery.	Contracted from cases 19 to 23, after having refused re-vaccination.
28	,, 22	46	119 King street W.	4 primary.	Each 6d.	Fair.	Slightly.	Discrete.	12	Recovery.	Contracted from cases 19 to 23.
29	,, 19	18	54 Johnson street.	3 primary.	Each 1s.	Good.	Yes.	Discrete and slight.	7	Recovery.	Had been suffering from unrecognized smallpox for about a fortnight previous to detection, and had worked in the mill the whole of that time. Source of infection not clear.
30	,, 19	53	54 Johnson street.	1 primary.	6d.	Faint.	Faintly.	Confluent.	21	Recovery.	Contracted from case 26.
31	,, 19	18	40 Johnson street.	3 primary.	Each 6d.	Fair.	Faintly.	Discrete and slight.	11	Recovery.	Contracted from case 26.
32	,, 23	26	47 Hempshaw lane.	3 primary.	Each 1s.	Good.	Yes.	Modified and slight.	15	Recovery.	Contracted from case 26.
33	,, 25	19	49 Charles street.	3 primary.†	Each 1s.	Good.	Yes.	Discrete and very slight.	20	Recovery.	Contracted from case 25. Re-vaccinated in 3 places after onset of disease.
34	,, 31	18	22 Ward street.	3 primary.	Each 1s.	Fair.	Slightly.	Discrete and slight.	18	Recovery.	Contracted from case 26.
35	Aug. 2	21	17 Cain street.	2 primary.	Each 6d.	Faint.	..	Confluent.	21	Recovery.	Contracted from case 26.
36	July 19	35	Hazel Grove.	3 primary.	Each 3d.	Faint.	Faintly.	Discrete.	24	Recovery.	Sent in for treatment from Hazel Grove.
37	Aug. 8	48	Hazel Grove.	None.	..	..	..	Hæmorrhagic.	1	Death.	Sent in for treatment from Hazel Grove.

* The eleven cases marked with an asterisk were treated in the Hyde Isolation Hospital, and for the foregoing particulars in regard to their vaccination, &c., I am indebted to Dr. G. W. Sidebotham, the Medical Officer of Health for the Borough of Hyde.

† Also 3 of re-vaccination *done after onset of disease.*

country that the London County Council convened a conference of representatives of the large urban sanitary authorities in the kingdom, with members of their own body, to consider suggestions for controlling the spread of disease by vagrants. This conference, at which by your instructions I was present, was held in London on July the 19th, 1894, and resulted in the adoption of the following resolutions, which were subsequently forwarded to the Local Government Board:—

1.—That common shelters which are not subject to the law relating to common lodging-houses should be made subject to such law.

2.—That there should be power to the local authority to require medical examination of all persons entering common lodging-houses and casual wards, and that each inmate of a common lodging-house or casual ward should on admission have a bath of fresh water.

3.—That the local authority should have power to order the keeper of a common lodging-house in which there has been infectious disease to refuse fresh admissions for such time as may be required by the authority.

4.—That the local authority should be empowered to require the temporary closing of any common lodging-house in which infectious disease has occurred.

5.—That the local sanitary authorities should have the power to require the detention of any inmate of a common lodging-house or casual ward who may reasonably be suspected of being liable to convey infectious disease.

6.—That means should be provided for the detention and isolation of any vagrant found wandering in a public place, if reasonably suspected of being liable to convey infectious disease.

7.—That the local authority should have full power to require the disinfection of the person and clothes of any person in a common lodging.house or casual ward, whether infected or exposed to infection.

8.—That arrangements should be made by which the occurrence of infectious disease in common lodging-houses or casual wards should be made known by the local authority of the district to the local authorities of other districts.

9.—That local authorities should be empowered to require the vaccination or revaccination of any persons in common lodging-houses or casual wards who are exposed to the infection of small-pox.

Vaccination.

The following figures relate to primary vaccination of infants during the decennium 1885-1894 in the three registration districts of Stockport, which include, in addition to the Borough, portions of Heaton Norris and Brinnington outside the Borough:—

Year ending 31st Decembr	No. of Births registerd	Successfully Vaccinated.	Insu'ceptible of Vaccination.	Had Smallp'x	Dead Unvaccinated.	Postponement by Medical Certificate.	Removal to districts the Vaccination Officer of which has been duly apprised.	Removal to places unknown or which cannot be reached and cases not having been f'nd	Unaccounted for.
1885	2465	1985	4	...	333	9	14	87	33
1886	2637	2146	8	...	318	17	13	97	38
1887	2603	2156	6	1	293	22	18	72	35
1888	2520	1939	7	. .	359	23	27	115	50
1889	2644	2127	12	...	318	31	21	107	28
1890	2551	1917	9	...	392	35	22	125	51
1891	2700	2035	5	...	377	46	26	142	69
1892	2644	1935	3	.	362	81	26	169	68
1893	2682	1755	12	...	367	137	36	135	239
1894	2690	1696	15	. .	374	172	22	176	235
Totals.	26136	19691	81	1	3493	573	225	1225	846

I am indebted to the courtesy of C. F. Johnson, Esq., Solicitor, Clerk to the Guardians, for these figures, from which it is unfortunately apparent that during the years 1893 and 1894 the number of children "unaccounted for" is about 3½ times as many as in any previous year: the cases of "postponement by medical certificate" are nearly twice as numerous, and cases of "insusceptibility" have increased 4- or 5- fold.

Continued Fevers.

TYPHUS: ENTERIC OR TYPHOID, AND CONTINUED.

Typhus Fever.

No occurrence of this disease was notified during the year. At the request of the medical attendant I visited in June a patient in Heaton Norris who it was thought might be suffering from the malady, but we arrived at the conclusion that the case was not one of this nature.

Enteric or Typhoid and Continued.

57 cases of enteric or typhoid and 2 cases of continued fever were reported during the 12 months, as compared with 236 of enteric and 20 of continued in 1893. Eight deaths resulted, representing a case mortality of 13·5 per cent. and an annual death rate per 1,000 persons living of 0·10 as compared with 0·16 (from "fevers") for England and Wales, 0·19 for the 33 Great Towns, and 0·20 for the 67 Other Large Towns. During the decennium 1884-1893, the average annual rate for your Borough was 0·35.

It will be seen from the following figures that in 1894 the typhoid *occurrences* were less than one-half, and the typhoid *deaths* less than one-third of the annual averages for the decennium 1884-1893 :—

YEAR.	OCCURRENCES.		DEATHS.
1884	121	Estimated.	22
1885	104		19
1886	192		35
1887	192		35
1888	170		31
1889	55		10
1890	65		16
1891	77	Notified	17
1892	62		17
1893	256		49
Decennial average	129·4		25·1
1894	57·0		8·0

In my special and annual reports for the year 1893 I endeavoured to place on record the result of my inquiries as to the cause of the previous and of the then existing prevalence of typhoid fever. It was shown that (1) the great majority of cases were remarkably grouped in the vicinity of the highest points of the respective steep-gradient main-sewers of the districts of Edgeley, of the Middle and St. Thomas's Ward, and of Heaton Norris, viz., in (a) the Castle Street neighbourhood of Edgeley between Hollywood Park and the Stockport Football Ground, (b) the streets and courts on each side of Middle and Higher Hillgate, and (c) a portion of Heaton Norris on both sides of the boundary line between the new Lancashire Hill and Old Road Wards. It was also pointed out that (2) whereas the unaffected parts of the Borough, speaking generally, possess a subsoil of boulder-clay, the houses and middens within the areas of special incidence (which are just above the escarpment of the valley) are built on and in sponge-like sand or gravel overlying a more or less basin-shaped layer of clay, cleansing of this sand and gravel being, under ordinary conditions, effected by the passage of "groundwater" towards the river. Further it was believed that (3) the exceptional heat and drought of 1893 constituted a most potent exciting cause of the outbreak by (a) reducing the self-cleansing power of the sewers, (b) lowering and diminishing the circulation of ground-water and thereby reducing its purifying action on the subsoil, (c) favouring the development of the specific enteric fever poison in stagnant sewer deposits, polluted subsoils, &c. Finally, it was proved, as forcibly and conclusively as such matters admit of proof, that (4) the influence of midden privies infected with the excreta of typhoid patients was most potent for evil.

The typhoid occurrences of 1894 exhibit distinct evidence of special incidence on the three areas most affected in 1893, 10 cases having occurred in the Castle Street district of Edgeley, 14 in the neighbourhood of Middle Hillgate, and 14 in the Lancashire Hill and Old Road Wards. One case was in a house in which typhoid occurred in 1893; in another the privy used by the patient had been infected by typhoid bowel-discharges in the same year. Testing the fever-favouring conditions of last year by the application of the conclusions recapitulated in the last paragraph in regard to 1893, the most important differences are probably the absence of the exceptional heat and drought of the previous year, and the provision, to some extent, of improved methods of sewer-cleansing and ventilation. Wholesale pollution of the subsoil continued and will continue as long as midden privies exist, and was increased by careless methods of slop-disposal and such defects of drainage as will always occur, but on the other hand there was no marked interference with the purifying action of circulating ground-water. Privies again became infected by the discharges of sufferers, and instances again occurred in which other persons are believed to have contracted the disease from using these structures. Apart therefore from the beneficial effect of such improvement in sewer-cleansing and ventilation as has been effected, it is clear that the occurrence of a hot, dry summer would complete the combination of factors responsible for the 1893 outbreak, and as long as the midden-privy system exists in your town, such an event will, in my opinion, be a cause of serious anxiety and possibly of much illness and mortality.

Professor Wright and Surgeon Major Semple of the Army Medical School, Netley, have recently drawn attention to **the infectivity of the urine in enteric fever,** and as the result of their investigations incline to the belief that it is the *urine* and not the faeces of patients suffering from typhoid fever which is mainly responsible for the spread of typhoid fever (vide "The Lancet," 12-7-95). If this really be so it affords a possible explanation of the method by which drains receiving no faecal matter may become infected. It also emphasizes the importance of disinfection of the urine in such cases, a point which has hitherto received little attention.

Measures adopted in regard to the Prevention of Cholera.

On receipt of notification from a Port Sanitary Authority a person who had arrived in Stockport from a cholera-infected foreign port was visited daily for some days. The railway authorities were also again communicated with in view of the possibility of passengers being attacked by this disease, and special attention was paid to the sanitary conveniences at the stations.

In December, 1893, a sanitary survey of your borough was made in connection with the Cholera Survey of England and Wales by Dr. R. Bruce Low, one of the senior medical inspectors of the Local Government Board.

On 24th January, 1894, Dr. Low attended a special meeting of the Sanitary Committee and conferred with them as to the measures to be adopted for dealing with cholera should it occur in the district. He also submitted a number of general sanitary recommendations, many of which had already been considered by the Committee. They referred chiefly to excrement and refuse disposal and to sewerage and drainage.

The following is a copy of Dr. Low's memorandum in reference to Cholera:—

SPECIAL DUTIES AS REGARDS CHOLERA.

In dealing with the actual occurrence of Cholera, the provisions of the Public Health Act, 1875, relating to infection, should be very stringently carried out in accordance with the terms of the Board's Memorandum of August 26th, 1892.

Measures thus taken should comprise the early isolation of persons attacked and the subsequent disinfection and limewashing of infected rooms and premises. All bowel discharges should, after disinfection, be safely disposed of. Repeated disinfection of privy contents and the flushing of house drains and yards should be practised. Clothing and bedding which have become infected should at once be either efficiently disinfected or burned.

On the occurrence of a case of cholera a house-to-house visitation of the immediate neighbourhood should be made with a view of the discovery and prompt dealing with any similar illness.

Arrangements should be made for the earliest possible intimation of the occurrence of cases of choleraic disease (including diarrhœa) being given to the Medical Officer of Health.

In all cases where water is derived from a source other than that of undoubted purity, it should be boiled before being used for drinking purposes.

In every instance disinfectants, accompanied with precise instructions for their use, should be supplied by the authority, under the personal supervision of the Medical Officer of Health.

Diarrhœa.

96 deaths were registered from diarrhœa during the twelve months, representing a mortality per 1,000 of 1·30, as compared with 0·51 for the 33 great towns and 0·40 for the 67 other large towns. Stockport is included in the latter category, and has earned the unenviable distinction of comment by the Registrar-General as having headed the list in regard to mortality from this cause in 1894.

As usual, the incidence of the disease is almost solely upon children under 5 years of age, and the question is of such importance to the death-rate of your borough that I think it well to again point out that the predisposing causes of infantile diarrhœa include (1) early weaning and injudicious hand-feeding, (2) insanitary conditions such as (*a*) soil pollution by slops, leakage from middens and drains, &c., (*b*) use of "made ground" containing excremental matters for building sites, (*c*) deficiency of air space and ventilation about dwellings when crowded on area or built back-to-back. The essential cause of the disease is believed to be a virulent chemical poison produced by a micro-organism which is capable of becoming air-borne, but which resides ordinarily in the superficial layers of the soil. In the organic matter of certain soils, and in food (inside as well as outside of the human body), this organism finds, especially under favourable conditions of temperature, material for its development and multiplication, and therefore for the production of the chemical poison referred to. It is, of course, well known that diarrhœa mortality is greatest in hot weather. Dr. Ballard has, however, shown that this increased mortality bears little relation to the temperature of the air. He found that it commences when the temperature of the *earth* at a depth of 4 feet registers about 56° F., and that in its further rise and subsequent decline it closely corresponds with the movements of the 4-foot earth thermometer. The latter falls much more slowly and gradually than the atmospheric temperature, and hence summer diarrhœa may continue into the fourth quarter of the year, long after the temperature of the air has fallen below 56° F.

On comparing the coloured chart accompanying this report with that of 1893 it is found that during 12 weeks of that year, viz., from July 9th to September 30th, the 4-foot earth-temperature registered not less than 56° F., whereas during 1894 the same earth-temperature was only maintained for about 5 weeks, viz., from July 22nd to 25th August. It will be further seen (vide yellow columns) that during the fifteen weeks from the middle of June to the end of September, 1893, no less than 168 diarrhœa deaths were recorded, the number during the same period of 1894 being 59, or very little more than one-third. Dr. Ballard's observations are therefore closely borne out by the experience of Stockport during the years 1892 and 1893.

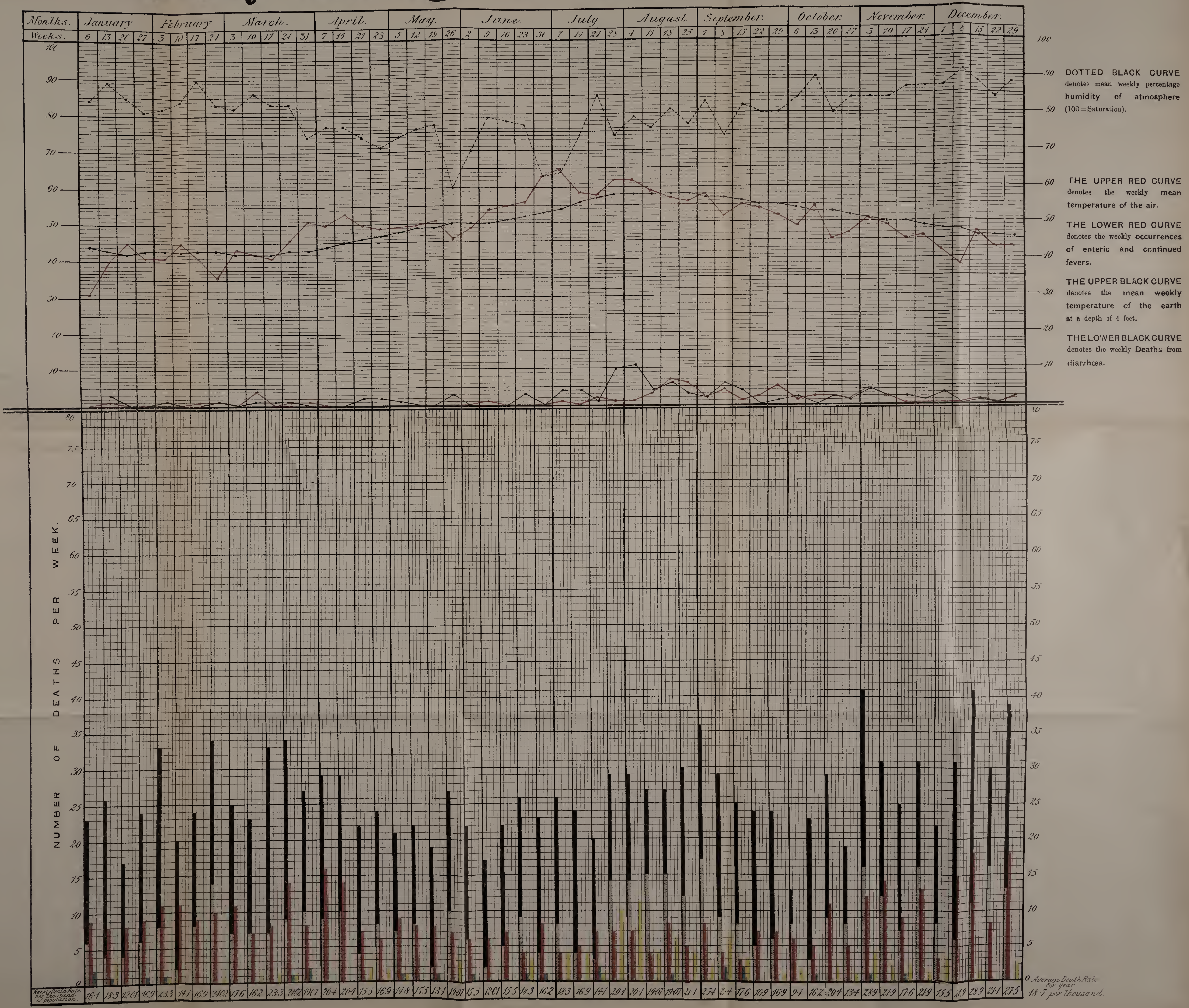
The existence of a relationship between diarrhœa and mild cases of typhoid fever, as well as the community of their predisposing causes, has been before referred to, and it is not surprising to again find some evidences of special incidence of diarrhœa in the districts which were most affected by typhoid, 10 cases having occurred in the new Edgeley Ward, 14 in Lancashire Hill Ward, and 22 in the Hillgate district. Four deaths occurred in the neighbourhood of Hope Hill, and there were a good many fatal cases in the lower-lying districts of the town towards the river, 9 having taken place in Hollywood Ward, 6 in Heaton Lane district, 11 in that part of Portwood between the Cheshire Lines Railway and the River Goyt, and 4 in Newbridge Lane.

Measles.

Only one death was recorded from measles during the year as compared with 37 cases in 1893. This unusual and satisfactory condition of affairs is largely attributable, however, to the fact that an immense number of children suffered from and were protected against subsequent attacks by the widespread epidemic of 1893, and as fresh generations of unprotected children arise the disease will doubtless continue to recur in epidemic form till such time as our methods of prevention become far more perfect than they at present are.

In October a few cases in the neighbourhood of Hall Street, Offerton Lane, and in other parts of the town were heard of. So far as I could obtain

County Borough of Stockport, 1894.



DOTTED BLACK CURVE denotes mean weekly percentage humidity of atmosphere (100 = Saturation).

THE UPPER RED CURVE denotes the weekly mean temperature of the air.

THE LOWER RED CURVE denotes the weekly occurrences of enteric and continued fevers.

THE UPPER BLACK CURVE denotes the mean weekly temperature of the earth at a depth of 4 feet.

THE LOWER BLACK CURVE denotes the weekly Deaths from diarrhœa.

WEEKLY RECORD OF DEATHS.

Black Columns. = Total of deaths from all causes. The shaded portion denotes deaths of children under 1 year.

Red Columns. = Deaths from Respiratory Diseases.

Blue Columns. = Deaths from Zymotic Diseases (excluding diarrhœa.)

Yellow Columns. = Deaths from Diarrhœa.

information they seemed to be chiefly the result of an extension of a serious outbreak in that part of Offerton known as Fogbrook and Gnat Hole, and perhaps also of the prevalence on account of which the schools in Heaton Mersey had been closed. The disease was, however, practically confined to the pupils of one private school, where fourteen children were attacked by it. All pupils who had not had measles themselves, or who had any brothers or sisters at home who had not had measles, were excluded from school, and cautionary notices were left at each of the infected houses. The results of these measures were very satisfactory, but of course it is difficult to say how far the limitation of the outbreak is ascribable to the protective influence of the epidemic of the previous year.

Upon the outbreak of the disease becoming known, the following circular dated 19th October, 1894, was sent to the managers of each Day and Sunday school in the Borough :—

REAPPEARANCE OF MEASLES IN STOCKPORT.

I regret to inform you that a considerable number of cases of measles have recently occurred in the Borough, and that there is every reason to apprehend another serious outbreak such as occurred last year. I would remind you that the epidemic of 1893 greatly interfered with the work of the Elementary Schools, and that the number of deaths which resulted from this cause exceeded the combined mortality from smallpox, scarlet fever, and diphtheria during the year under notice.

I would therefore again earnestly invite you to be kind enough to co-operate with this Department in seeking to limit the extension of the disease, and to serve our common interests by instructing your teachers to at once notify to me the occurrence of any suspicious cases amongst your scholars, with the addresses of the sufferers. Special attention should be directed to the condition of the members of your Infant Classes, they being more liable to attack than older children.

As the ordinary Symptoms of Invasion are those of a severe Feverish Cold, with Running from the Eyes and Nose, Sneezing, and Cough, and as measles is highly infectious from the first, any child presenting such signs, together with any other member of the same family, should be excluded from your schools. This remark of course applies with equal force to Sunday Schools, Congregations, and other Public Assemblies.

Much of the heavy mortality from measles undoubtedly results from exposure and neglect due to widespread ignorance of the really grave nature of the disease. A handbill giving instruction on this and other points is therefore about to be circulated, and a supply will be sent to you. May I ask you to assist in the diffusion of this information by causing each of your pupils to be supplied with a copy of this handbill for transmission to parents or guardians.

As measles is not compulsorily notifiable, any information or other assistance you can give me in relation to the disease will be especially valuable.

Fortunately, however, the disease did not spread to any extent, and so very few cases were reported by the school managers.

The following is a copy of the cautionary handbill referred to :—

1. Measles is a very fatal disease. In the years 1891, 1892, and 1893, the total number of deaths from Measles in Manchester was more than twice the number from Scarlet Fever. In Stockport the number of deaths from Measles alone during April, May, June, and July of 1893 exceeded the combined total of deaths from Smallpox, Diphtheria, and Scarlet Fever during the whole year.

2. It is very highly infectious, especially in the early stage for several days before the rash appears. The early signs of the disease are coughing, sneezing, and redness of the eyes, with some degree of illness.

3. A child at either Sunday School or Day School with such marks of illness should be at once sent home, and the teachers, particularly in the Infant Department, should be on the outlook for the first signs of illness if Measles has made its appearance in the school or neighbourhood. Any illness in a child should then be considered sufficient reason for sending it home till the nature of the illness has become plain.

☞ The Public Health Act, 1875, provides that :—Any person suffering from any dangerous infectious disorder, who, without proper precaution, wilfully exposes himself in any street, public place, shop, inn, or public conveyance is liable to a penalty of £5, and also that any person who being in charge of an individual so suffering, so exposes such sufferer, is liable to a penalty of £5.

4. Anyone attacked by Measles should, if possible, be placed in a separate room upstairs with a good fire burning in the room, and the window open sufficiently to admit fresh air, without allowing the room to get cold. The bed should be placed in that portion of the room not lying between the window and the fire, in which there is least draught. In summer the fire should not be large, but should not be absent. Where a separate room cannot be provided the same procedure should be carried out.

5. In view of the high mortality from the disease, parents are advised in every instance to seek medical advice.

6. The children at home not attacked should not go to either Sunday School or Day School or other place of meeting for a month after the appearance of the eruption in the first child, and, if subsequent cases occur, not until a month after the appearance of the eruption in the last child attacked.

7. When a case of Measles has occurred in a house, a careful outlook should be kept on the other children, so that, on the first appearance of illness, they may be kept at home and properly treated.

8. When a child at any house is suffering from Measles, no neighbour's child and no neighbour accompanied by a child must be admitted, nor should the child ill with Measles be allowed to play with other children for a month after the appearance of the rash.

9. Before the child attacked returns to school the following measures should be carried out. All articles of clothing worn by the sick child and the bedding and hangings of the sick room should be washed and put out to air for some days. All washable articles of furniture in the room should be washed. The walls of the room, if papered, should be cleaned down with dough, the dough being at once burned. If not papered, the walls should be lime-washed. In all cases the ceiling should be lime-washed. The floor should be thoroughly scrubbed. The window should be left open for several days, and the window curtains removed so as to admit as much light as possible. The skin of the child who has been ill should be thoroughly cleansed by several washings with soap and warm water,

Compulsory Notification of Measles.

In my last report I laid before you the chief reasons for and against notification, and I will now content myself with again stating that, while I am not disposed to urge compulsory notification of all cases of measles, I am of opinion that in a town of the population of Stockport a very modified and comparatively inexpensive system of *notification of first occurrences, if in force at the onset of an apparent epidemic,* ought to yield good results, if energetic advantage were taken of the earlier opportunities thereby afforded for (1) controlling school attendances from infected households, (2) detecting infected schools which were acting as foci of the disease, and (3) for warning parents as to the serious nature of the malady, and the necessity for isolation, proper care, and medical attendance. It would also tend to prevent the not infrequent concealment of, or carelessness in regard to, mild cases of Scarlet Fever on the pretext that they were believed to be cases of Measles. It should be clearly understood that these anticipated advantages are quite unconnected with the isolation of measles in your hospital, which I regard as quite impracticable.

Scarlet Fever.

This was the only zymotic that was prevalent to anything like the same extent as in 1893, 229 cases having been reported as compared with 254 in the previous year. The existence of 2 cases in one house was notified in 16 instances, and a triple occurrence was recorded twice. The disease was of a generally milder type, the death-rate per 1,000 persons living being equal to 0·08 as compared with 0·21 for the 33 Great Towns, and 0·32 for the 67 Other Large Towns. As pointed out last year this very mildness of type largely increases the difficulty of controlling the prevalence of scarlet fever, for in many instances the symptoms of illness have been so slight that recognition of the disease has been long delayed, infection being in the meantime transmitted to others. The largest number of cases occurred in February (25), June (34), and September (26), while in October and November, the usual period of maximum prevalence, there were only 12 and 13 cases respectively. On "plotting" the occurrences on to the new ward-map, Shaw Heath, St. Mary's, and Old Road claim very few (4, 5, and 8 respectively), whilst on the other hand 20 occurred in Lancashire Hill Ward, 24 in Portwood, no less than 48 in Edgeley proper, and intermediate numbers in each of the remaining wards. With regard to this exceptional prevalence in Edgeley, an analysis of the case-register shows that out of the 48 cases reported 16 (most of which occurred during the first 5 months of the year) were pupils at Edgeley Wesleyan School, whilst 14 cases reported mostly in the latter part of the year, in addition to several detected by the Health Department, were similarly directly or indirectly associated with St. Matthew's. These two schools therefore appear to have been, to some limited extent, foci of the disease. Various other schools in other parts of the Borough seem to have exercised a similar influence, though not to the same extent, and I take this opportunity of acknowledging my indebtedness to the many teachers with whom I have had to deal, all of whom have co-operated willingly with your officials, and by carefully excluding children from infected houses have successfully prevented any serious extension of the malady amongst their pupils. Such voluntary help is essential if outbreaks are to dealt with without compulsory school-closure, and is conducive to the common interests of all concerned.

On November 1st an interesting group of cases was discovered in the Edgeley district. A medical man in the town was called in to see a child about 18 months old which had been suffering from scarlet fever for 4 days, viz., since 28th October. It was then found that this child's sister, aged 7, who was attending St. Matthew's School, had been taken ill with the usual symptoms of scarlet fever on 26th October, and that another sister, aged 13, who was in service in the vicinity, was similarly seized on 30th October. It was also elicited that some of their playmates living in an adjacent street had been suffering from sore throat. On inquiry in this second household it was ascertained that a child, aged 5, who had been and was still attending the St. Matthew's School, had vomited and been very flushed and feverish on 24th October, and had developed a sore throat and rash the following day, and that 4 days later another child in this family, aged 4, had exhibited the same symptoms. Having carefully examined these children I concluded from the history and such signs as remained that they had also probably been suffering from scarlet fever, and this opinion was subsequently shared by Dr. Edwin Rayner, J.P., who kindly saw the cases with me. Their private medical attendant, however, expressed the opinion that it was measles and not scarlet fever with which we had to deal, the result being that the parents appeared to think that they were at once relieved of all responsibility in regard to the consequences of spreading infection, and were with difficulty made to realize and observe their obligations under Sections 126 *et seq.* of the Public Health Act, 1875. On the following day I visited and inspected each class at St. Matthew's School, closely examined some 18 suspicious cases, and requested that 4 of them should be excluded for a few days and only readmitted on a medical certificate. The children of the second family above referred to were kept under observation for a considerable time, but such desquamation as occurred was very slight and almost imperceptible, and the nature of the cases is therefore not perfectly clear. Possibly they may have been occurrences of epidemic roseola or German measles, which is sometimes almost indistinguishable from mild scarlet fever; personally, however, I am still of opinion that they were manifestations of the latter disease.

In two instances scarlet fever reappeared in households shortly after the return thereto from your Isolation Hospital of patients who had been suffering from this fever. One of these had been under treatment for 6, and the other for 9 weeks. The latter while in hospital had suffered from persistent rhinitis, and although this had ceased at the time of his discharge it recommenced immediately after his return home, and was doubtless the cause of the second outbreak. In the other instance the cause of recurrence was not clear, as the recently returned patient had desquamated and was free from any nasal or other morbid discharge as far as could be ascertained.

At page 36 of my last Annual Report I represented to you the necessity which exists for the provision of adequate facilities for the isolation of infectious disease occurring outside, but in the immediate neighbourhood of, the Borough. This representation was considered by the Sanitary Committee on 31st December, 1894, and it was unanimously resolved:

"That in view of the powers now possessed by County Councils under the Isolation Hospitals Acts, 1893, Sections 6 *et seq.*, the special attention of the County Councils of Cheshire and Lancashire be drawn to the necessity which, in the opinion of this Committee, exists for the provision of adequate means of isolation of patients suffering from infectious diseases in certain urban and rural sanitary districts immediately circumjacent to the County Borough of Stockport, and to the fact that the absence of such provision has been an active source of injury and is a standing menace to the health of the inhabitants of the said County Borough."

Copies of this resolution were forwarded to the County Councils referred to, and will doubtless tend to strengthen their hands in dealing with the provision of infectious hospital accommodation in the large areas which they control.

Diphtheria and Membranous Croup.

During the year 20 cases of diphtheria were reported, 5 of which were fatal, and 14 cases of membranous croup, 11 of which ended in death, making a total of 34 cases of diphtheritic disease and 16 deaths, as compared with 80 cases and 32 deaths in 1893. In other words, its prevalence was diminished, but its malignity was increased in the proportion of 47·5 to 40, the case-mortality of the years under notice. The death-rate per 1,000 persons living was 0·21 as compared with 0·61 for London, 0·38 for the Thirty-three Great Towns, and 0·19 for the Sixty-seven Other Large Towns. There is no evidence that school attendance had much to do with the occurrences reported throughout the Borough, and the only approach to any special incidence was in the Middle Hillgate district, whence some six cases were notified.

In 9 instances insanitary conditions of drainage were found to exist at the houses in which the disease had occurred, but the exact relation of diphtheritic disease to insanitary conditions is by no means constant or clearly defined; it is, however, quite certain that diphtheria *may* and often does occur quite independently of insanitary conditions, such as drainage defects and offensive accumulations, though the existence of the latter would doubtless have a devitalizing and therefore predisposing influence.

You will observe that the cases notified as membranous croup were of a very malignant nature, death having resulted in no less than 11 of the 14 reported. The Registrar General includes "membranous croup" with "diphtheria," and the term is undoubtedly employed by many medical men to signify "diphtheria affecting the larynx or wind pipe in young children," especially when, as often happens in such cases, there is at first some elemement of doubt in the diagnosis. For example, on 15th March 2 cases of membranous croup were notified in one house, the ages of the patients being 19 months and 4 years, and on the 17th March an older member of the same family was certified to be suffering from diphtheria. Again, in another quarter of the town, and by another medical man, membranous croup was reported on 27th August in a child 2½ years old, and at the same time an older member of the same household was certified to have diphtheria. Such instances admit of multiplication, and there is, I think, little doubt that in the great majority of cases diphtheria and membranous croup are synonymous. The practical application of bacteriology affords, however, rapid and valuable aid in diagnosis, and I hope that by the time this report is in your hands arrangements will have been completed on your behalf with Professor Delépine, M.B., of the Owens College, whereby the morbid products from any doubtful case will be submitted to bacterioscopic examination, and a definite expert opinion quickly obtained.

Existing knowledge of the true causes of diphtheria being still far from perfect, and the advent of improved sanitation and better preventive measures having been accompanied in most large towns by no corresponding diminished prevalence of the disease, it is most desirable that every sufferer from this deadly affection should have the benefit of the full resources of curative medicine. There is perhaps no disease which requires more careful nursing and attention to hygienic surroundings than diphtheria, and for this reason, as well as on account of the advantages of isolation, I beg leave to direct your special attention to the great necessity for the provision of a small separate pavilion at your hospital for cases of this malady. At present I cannot accept the responsibility of admitting such cases, as they would have to be placed, to the danger of all concerned, amongst typhoid or scarlet fever patients. The result is that the sufferers remain at home without proper accommodation or suitable nursing, to infect others and usually to die themselves.

During the past year a new treatment of diphtheria, by what is known as the "Antitoxin" method, has attracted much attention, and been largely adopted in this country as well as on the Continent. It is based upon the belief (1) that the symptoms of diphtheria are due to the formation by the diphtheria microbe of a chemical poison or *toxin*, (2) that by preparing and injecting gradually increasing doses of this toxin beneath the skin of certain animals, *e.g.* the horse, the slight symptoms of constitutional disturbance which at first followed the injections gradually cease to do so, and the animals eventually become immune to, or protected against, the diphtheria poison, (3) that the serum or straw-coloured fluid obtained from the blood of such immunized animals acts when injected into a person or animal suffering from diphtheria as a powerful antidote to the diphtheritic poison or toxin, hence its name "*antitoxin.*"

The method adopted by M. Roux, of the Pasteur Institute, for obtaining the *toxin* for the purpose of immunizing the animals for the production of *antitoxin* is very briefly as follows:—Diphtheria bacilli are introduced into and cultivated in broth at a temperature of 98·6° F. in flasks of such a form that it is possible to cause a current of air to constantly pass over the surface of the inoculated liquid for about 3 weeks. At the end of this time the maximum amount of *toxin* or diphtheria poison has been produced by the bacteria, and no more will be formed. This culture broth is then freed from *bacteria* by being passed through a Pasteur-Chamberland filter, the filtrate containing all the "*toxin.*" This fluid, mixed with decreasing proportions of a solution of iodine, is injected in gradually increasing doses into the skin of the horse in front of the shoulderblade. The only symptoms produced are a slight rise of temperature and a little redness and swelling at the point of injection, but these do not long continue to appear, and after about three weeks the horse is practically immune, and capable of yielding "antidiphtheritic serum."

The precise value of this antitoxin in the treatment of diphtheria is yet *sub judice*, but the records hitherto have been encouraging. The British Institute of Preventive Medicine has been enabled by public subscriptions and other funds to undertake the production of antidiphtheritic serum on a large scale at their farm near Harrow, and to supply it at a price merely sufficient to cover the working expenses. Messrs. Burroughs, Wellcome, & Co., of London, have also arranged for the extensive production of this serum, and have offered to supply a reasonable amount gratis to Fever Hospitals on condition that careful records be kept of the cases treated therewith. In Stockport very successful results have been obtained in regard to such patients as have been treated by this method, and in view of the excessive fatality of the disease, it is sincerely to be hoped that prolonged trials in England may be found to endorse the verdict of the Paris Academy of Medicine, that "We are now in the possession of a remedy (for Diphtheria) as powerful as it is harmless."

I may add that antidiphtheritic vaccination with this serum is now employed by the Board of Health of New York for the protection of those members of their sanitary and hospital staffs who have to deal with cases of diphtheria.

Influenza.

Eight deaths were registered from this cause at intervals during the first 10 months of the year, and it would appear that this disease, which of late years has been such a frequent epidemic visitant, has in a modified form taken up its abode with us and "come to stay." It is very improbable that the 8 deaths directly assigned to it represent the true extent of the fatal mischief wrought by it, as it undoubtedly aggravated and complicated many other diseases, and has left many sufferers in a more or less permanently debilitated condition.

Under the heading of Influenza the Registrar General in his Report for 1893 states

> "That the excess of the mortality, or in other words the loss of life actually due to influenza, in England and Wales, during 1893, was about 15,000, which being added to the 110,000 lives lost in the three previous years, makes an aggregate loss of not fewer than 125,000 lives in the four years 1890-1-2-3. Thus to every three deaths directly attributed to influenza in these four years about 5 more deaths really caused by the disease were returned as due to various diseases of the respiratory organs."

Again, referring to the excessive mortality from respiratory diseases in 1893, the Registrar General makes the following interesting observation in regard to London :—

> "It is worthy of note, as showing that this excess was not due to its ordinary cause, namely, great or prolonged depression of temperature, that the deaths referred to bronchitis, which is the respiratory disease

specially influenced by variations of temperature, were more than 7 per cent. *below* the average, whilst those referred to pneumonia were 35 per cent. *above* the average, of the preceding 10 years. If we compare the mortality in 1893 with that in the year 1889, which immediately preceded the influenza period, it will be seen that, after allowing for increase of population, the mortality from pneumonia showed an excess of 65 per cent., while that from bronchitis showed an excess of less than 10 per cent.

It is therefore highly desirable that the public should bear in mind the following facts set forth in the official memorandum on the subject, issued by the Medical Officer of the Local Government Board, and which are in substance as follows:—1. Influenza is an eminently infectious complaint communicable in the ordinary personal relations of individuals one with another. 2.—The disease spreads very rapidly in consequence of its incubation period being very short, and of the power possessed by the contagion of rapidly reproducing itself. 3.—The success of preventive measures depends therefore upon the promptness with which they are undertaken. 4.—The following preventive measures are recommended:—First: Separation between the sick and the healthy so far as is practicable. Second: Isolation of infected persons in large and warm but well-ventilated rooms. Third: That persons who are attacked by this malady should not attempt to pursue their ordinary avocations, but should at once seek rest, warmth, and medical treatment. Fourth: That all unnecessary assemblages be studiously avoided, as the propagation of influenza is known to be promoted thereby. Fifth: Such preventive measures are specially desirable under the following circumstances:—1st. For aged or infirm persons. 2nd. For inmates of institutions, the mode of life in which can be regulated or controlled. 3rd. For the first cases in a locality or household where these are early recognised as influenza. In the words of the *British Medical Journal*, it cannot be said too strongly or repeated too often that the man who, while suffering from epidemic influenza, insists upon going about his daily business disseminating disease wherever he goes in public conveyances, business places, and places of public resort, is a public danger. No one thinks of throwing off measles or scarlet fever by going into public places; why, then, influenza, which is not less infectious?

Puerperal Fever.

Nine cases were reported during the year, 4 of which ended fatally. In only 1 case were the sanitary conditions below a fair average. Four of the 9 cases reported were in the practice of one medical man, and two of them were attended by the same midwife.

Erysipelas.

56 cases were reported during the year, and 2 ended fatally. Some of these occurrences were traumatic in origin, but in the great majority of cases no history of injury was obtained.

Apart from the fact that not infrequently structural insanitary conditions are detected and remedied as the result of inquiry into cases of erysipelas, the utility of the notification of this disease is open to doubt. This is also the recorded opinion of other Medical Officers of Health.

Whooping Cough.

Three deaths only were assigned to this cause during the year, the mortality per 1,000 persons living being equal to 0·04 as compared with 0·45 in 1893, with 0·48 for the 33 great towns and 0‘39 for the 67 other large towns. Probably, as with measles, the extensive prevalence of 1893 is largely responsible for last year's freedom, a record which we cannot reasonably expect to see maintained.

A proposal has been made to notify whooping cough, but I am disposed to regard this as hardly within the range of practical sanitation, owing to the insidious onset of the disease, the absence of a rash, and the consequent fact that the disease is rarely detected until many days after it has reached the infectious stage. The deaths are almost always due to bronchitis, pneumonia, or convulsions, very frequently the result of neglect and undue exposure, as in the case of measles.

Lung Diseases.

Phthisis or Consumption.

156 deaths were assigned to this cause during 1894, representing a rate of 2·11 per 1,000 per annum, as compared with 2·3 in 1893, and with 1·46 for England and Wales during the preceding decennium. Phthisis or consumption is one of the diseases that may justly be regarded as, in a large degree, preventible. It is distinctly predisposed to by insanitary conditions, and their gradual removal throughout the country has led to a steady decline in the phthisis death rate. The streets and courts on both sides of Middle Hillgate again appear to have been an area of special incidence, and this is not surprising, for as pointed out last year " the population is perhaps more dense here than in any other part of the town, much of the property is very old, damp, and dilapidated, back-to-back houses are numerous, ancient and leaky privies are to be found close to dwellings, and the atmosphere of the houses and courts is often stagnant and impure." Twelve cases occurred in the Heaton Lane district, and the same number in the Old Road Ward. 28 deaths were reported in the Workhouse, where, of course, many sufferers from the disease are congregated, and it is noteworthy that in the rest of Shaw Heath Ward, which is comparatively small, 13 deaths were registered.

The influence of occupation in regard to mortality from phthisis is very important, but to be of practical value statistics on this point should relate to a substantial period of time, and I do not at present possess data from which reliable deductions might be made.

In reference to **the influence of tuberculous food in causing phthisis** the late Royal Commission appointed to inquire into the effect of such food on human health, think it probable that an appreciable amount of the tuberculosis which affects man is obtained through his food, and of this no doubt the largest part is by means of milk containing tuberculous matter but they are unable to form a definite opinion as to the proportion of cases of tuberculosis in man which is thus acquired. This report is again referred to in the sections dealing with meat inspection (p. 73) and with milkshops (p. 70).

Bronchitis, Pneumonia, and Pleurisy.

The deaths from this cause numbered 301, of which 118 occurred in the first five years of life and 183 after the completion of this period, as compared with 157 and 184 respectively in 1893. It is therefore seen that during the year under present notice the deaths of young children were less by 39 than in 1893, and it is, I think, reasonable to believe that this was to a large extent due to the comparative freedom of the Borough from measles and whooping cough, both of which diseases frequently terminate in fatal pulmonary complications or sequelœ. The deaths registered represented a rate per 1,000 persons living of 4·09, as compared with 3·73 for England and Wales during the decennium 1883—1892. Mortality was highest from this cause in Portwood (5·1) and the Middle Ward (5·03), lowest in Edgeley (3·2), and St. Thomas's (3·7).

I alluded last year to the possibility that the premature occupation of newly-built houses before they were properly dry may have some bearing on the heavy mortality from chest complaints. Whether this be so or not, it is remarkable that in Edgeley, where building is proceeding most rapidly, mortality from lung diseases (other than consumption) is lowest.

In connection with mortality from respiratory disease, I beg to refer you to the remarks of the Registrar-General quoted at pp. 39 and 41, under the heading of Influenza, as to the extent to which the latter malady is responsible for its great increase during recent years.

The Isolation Hospital.

The following particulars, which have from time to time been asked for by different Authorities, may with advantage be here recorded:—

Site.—An area of three acres, one rood, at the junction of Dialstone and Cherry Tree Lanes, one mile six furlongs and 186 yards from the Court House. The nearest point of the pavilions is 79 feet from Dialstone Lane, 63 feet from Cherry Tree Lane, 524 feet from Cherry Tree Farm House, 456 from No. 109, Cherry Tree Lane, and 467 feet from Alderman Robinson's house. The subsoil is yellow boulder clay.

COST :—

	£	s.	d.	
Cost of Buildings	4635	13	4	
Cost of Site	1346	14	0	
Cost of Furnishing	710	2	11	to Jan. 1st, 1895

Accommodation.—Consists of central administrative block and two detached pavilions (north and south). The central block contains on the ground floor, kitchen, scullery, matron's parlour, and a dispensary. Upstairs are bathroom, matron's bedroom, large bedroom for three servants, and three nurses' bedrooms. In basement are linen store, boiler for heating apparatus, and cellars. Each pavilion is approached from the central block by covered corridors, and is a single storied building. It is entered by a hall leading to a passage into which opens the doors of its three constituent wards. Two of the wards each contains 12,096 cubic feet, and the third or intermediate one 4,410 cubic feet. Each wing contains also a bathroom with movable bath, a nurses' room, and store cupboard. The administrative block and the southern wing have been recently provided with water-closets: in the northern or typhoid wing remain the original earth closets, scavenged from outside. The hospital was opened for the reception of patients in 1881.

CASES TREATED FROM 1888 TO 1893 INCLUSIVE.

	1888.	1889.	1890.	1891.	1892.	1893.
Smallpox	98	0	1	0	6	22
Scarlet Fever ...	35	36	91	32	26	127
Typhus	3	0	0	0	1	0
Enteric	12	14	22	15	16	85
Diphtheria ...	0	0	2	1	2	9
Other diseases	1	16	4	0	0	1
	149	66	120	48	51	244

PAYMENTS BY PATIENTS.

	£	s.	d.		£	s.	d.
1888	108	4	6	1891	25	7	0
1889	591	10	9	1892	150	18	6
1890	122	14	6	1893	122	12	0
					£1121	7	3

NETT COST OF MAINTENANCE.

	£	s.	d.		£	s.	d.
1888	715	0	2	1891	928	6	2
1889	864	19	0	1892	509	19	8
1890	607	16	2	1893	1392	8	11
					£5018	10	1

CHARGES FOR REMOVAL, MAINTENANCE, AND TREATMENT OF PATIENTS, DISINFECTING, &c.

All patients resident within the Borough are removed, maintained, and treated and their belongings disinfected at the expense of the Corporation.

Payment by Patients.

Members of the families of ratepayers in the Borough who reside outside are charged 25s. per week for maintenance and treatment: 3s. per hour for use of horse-ambulance between 8 a.m. and 5 p.m., and 4s. per hour at other times: 7d. per hour per man employed for disinfection of premises, and 7s. 6d. to 5s. for steam-disinfection of clothing, &c.—(*Vide* Minutes of Sanitary Committee, March 12th, 1894 and February 26th, 1894.)

The Guardians' patients and those of other Sanitary Authorities are charged the following rates:—Two and a half guineas per week for maintenance and treatment of each patient: 4s. per hour between 8 a.m. and 5 p.m. for removal of patients, and 6s. per hour at other times: 3s. per hour between 8 a.m. and 5 p.m. for removing infected articles for disinfection, and 4s. 6d. per hour at other times: 10s. 6d. per van-load (minimum charge 5s.) for steam-disinfection of such articles.—(*Vide* Minutes of Sanitary Committee, February 12th, 1894).

In the following table is set forth particulars in regard to the number of patients isolated during the year 1894. The beneficial influence of the hospital was again most marked, especially in dealing with the smallpox outbreak.

	In Hospital Jan. 1st, 1894.	Admitted.	Recovered.	Died.
Scarlet Fever ...	13	138	133	5
Enteric Fever ...	2	19	16	3
Smallpox	...	26	24	2
Diphtheria	...	2	1	1
	15	185	174	11

Average length of isolation for smallpox cases 15 days.

,, ,, ,, scarlet fever cases 44·5 days.

,, ,, ,, enteric fever cases 38·2 days.

In August, 1894, the father of a patient made certain complaints and statements as to the treatment received by his boy whilst a patient in the hospital. The Sanitary Committee having made a searching inquiry into the truth or otherwise of these allegations, and having questioned a number of contemporary patients including Mr. A. M. Fowler, junr., C.E., expressed themselves perfectly satisfied with the boy's treatment, and resolved to proceed against the father if furthur false statements were made by him.—(*Vide* Minutes of Sanitary Committee, August 13th, 1894.)

* SUMMARY OF HOSPITAL EXPENDITURE.

For the Year ending December 31st, 1894.

	£	s.	d.
Salary and Wages	439	0	11
Food Account	419	14	4
Instruments and Drugs	25	11	5
Coal, Coke, Gas and Water	139	10	3
General District and Poor's Rate	49	12	0
Rent of Telephone	15	3	2
Furnishing	41	16	3
Painting and Decorating Northern Pavilion and Administrative Block	53	14	9
Provision of Water-closets in House and Scarlet Fever Pavilion	34	5	7
Re-drainage by Highways Committee	70	7	7
General Repairs to Pavilions, Out-offices, Fever Van, &c.	76	8	2
Disinfection of Clothing at the Ladywell Sanitorium	9	9	0
Maintenance of Smallpox patient in Hyde Hospital	15	15	0
Fire Extinguishing Apparatus	21	0	0
Miscellaneous	52	13	5
	£1464	1	10
Less amount received from other Authorities for isolation of their cases	150	9	10
Balance, being excess of Expenditure over Income	£1313	12	0

THE HOSPITAL STAFF

comprises the steward, matron, four nurses (including probationers), and in addition a cook, housemaid, and laundress. Some slight changes took place in the nursing staff by resignation, and an additional probationer was admitted. The nursing and household arrangements worked smoothly and satisfactorily under the efficient superintendence of the Matron. The responsible duties of the Disinfecting Station were carefully performed by the Steward and his assistant, and the condition in which the hospital premises and grounds were kept gave much satisfaction to your Hospital Sub-Committee.

STRUCTURAL ALTERATIONS, &C.

During the year the floors of the northern pavilion were stained and varnished, and the walls painted. A considerable amount of re-drainage was effected in connection with the pavilions and out offices, and in one of the latter a stall was provided for the ambulance horse.

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* Summary of Statement kindly furnished by the Borough Treasurer.

PROVISION OF FIRE EXTINGUISHING APPARATUS.

At the beginning of the year I called your attention to the desirability of overhauling and supplementing the existing apparatus which consisted of a useful wheeled hand-pump and buckets. The matter was referred by you to the Chief Constable who recommended the provision of a standpipe, a sufficient length of those to reach to any part of the ground, together with more buckets and an extincteur for each room and ward. In due course these were obtained, rules against and during fire were adapted by me from Messrs. Merryweather's code, and at intervals "practices" have since been held.

WHITEHILL SMALLPOX HOSPITAL.

Only one case of smallpox was isolated at Whitehill, that being the last which occurred during the year. The other cases, with the exception of one which was sent to Hyde, were isolated in the northern pavilion of the Isolation Hospital, as at the time of their occurrences Whitehill House was undergoing extensive structural alterations, and a new deep well was being sunk. The house is now adopted for the reception of patients, and the requisite furniture, &c., is kept in readiness at the Isolation Hospital.

Whitehill Hospital is situated 205 yards from the nearest inhabited building (a large mill): there are 115 houses within a quarter of a mile radius, and about 1100 within the half-mile radius.

The cubic capacity of the rooms is as follows :—

Ground Floor.—	No. 1 to east of hall,	8,945	cubic feet.
	No. 2 to west of hall,	3,506	,,
Upper Floor.—	No. 3, Large Ward	7,480	,,
	No. 4, room over hall,	1,028	,,
	No. 5, room over No. 2,	2,772	,,
	No. 6, room off bath-room	1,980	,,
	No. 7, room between No. 6 & No. 3,	1,203	,,

Need for Further Hospital Accommodation.

Almost the last official act of Dr. Edwin Rayner, J.P., your late Medical Officer of Health, was to point out the necessity for further hospital accommodation. A generally accepted rule is that in large communities one bed should be provided for every thousand inhabitants. Each patient should in addition be allowed 2,000 cubic feet of air-space, 12 feet of wall-space, and 144 square feet of floor-space, and that there should be means of separately isolating at least 4 kinds of infectious disease. In addition, in connection with all fever hospitals, a quarantine or observation ward for suspicious cases is highly desirable. At present, however, you have no observation ward, and only possess the means of isolating 3 kinds of infectious disease, even with Whitehill. For though there are 3 wards in each of the 2 pavilions at

Dialstone Lane, there is only safe accommodation for 2 classes of infectious disease there, as the 3 constituent wards of each pavilion are in direct communication with each other. As regards the number of beds available, Dialstone Lane affords regulation cubic capacity for 28 adult patients, though during the typhoid epidemic a much larger number had to be accommo. dated. Whitehill will accommodate, say, 15 patients without serious over-crowding. This makes a total of 43 available beds. Now, the population of the town is, say, 74,000, and it is rapidly increasing. The provision of 75 to 80 beds altogether for the purposes of isolation is, therefore, desirable, and would not be at all excessive.

In connection with this question, I would remind you that the memorandum of recommendations submitted on 22nd January, 1894, by Dr. Bruce Low on behalf of the Local Government Board includes the following:—"To meet the increased needs of a large manufacturing population, at whose homes the proper isolation of infectious disease is impracticable, the Sanitary Authority should take steps to supplement their present accommodation."

Under the heading of DIPHTHERIA, I have already referred to the regrettable fact that you are at present without means of isolation for cases of this disease, which is from time to time so prevalent in large towns, and in which good nursing and hygienic surroundings are of such importance to the welfare of the sufferers.

ISOLATION OF PAUPER PATIENTS.

A further reason for the provision of additional hospital accommodation is supplied by a recent decision of the High Courts in reference to the vexed question of the position and duties of municipal corporations in regard to the admission of pauper patients to corporation fever hospitals. The matter was argued before a Divisional Court of the Queen's Bench Divison (Matthew and Kennedy J. J.) on 1st August, 1894, in the case of Regina v. the Mayor, &c., of Rawtenstall. The Court came to the conclusion that the Corporation were bound to receive into their hospital persons suffering from infectious disease, being inhabitants of the Borough, whether paupers or not, but that the Guardians were liable to repay to the Corporation the cost of maintenance of such patients as were chargeable to the Union.—(*Vide The Times*, 2nd August, 1894).

OTHER REQUIREMENTS.

Another matter to which I have again to draw your special attention, is the very pressing necessity for further provision for the nurses both as regards sleeping accommodation and a day-room. The matter has been referred to the Surveyor, but has so far been crowded out by the pressure of other important work in his Department. Finally, the provision of a high unclimbable impenetrable fence round the hospital grounds is a matter which requires early attention, as well as the partitioning off by similar fences of the grounds used by different classes of convalescents.

Disinfection.

Throughout the year your new "Nottingham" disinfector worked very satisfactorily. Some difficulty was, however, experienced in connection with the wear and tear of the india-rubber-like material with which the edges of the doors are faced, so as to make a steam-tight joint when the doors are screwed up. The original "rings" wore out within twelve months, and as the cost of replacing them is nine guineas, experiments were made with other materials, *e.g.*, strips of india-rubber, sheet lead, lead piping and gaskin, &c., by members of the Committee possessed of practical mechanical knowledge. Eventually a cheap and satisfactory joint was obtained by filling in with lead the bed of the original rings and superimposing upon this lead six thicknesses of stout brown paper, which can easily be renewed as required.

In the course of a discussion on "Disinfection by Steam" at the Liverpool Congress of the Sanitary Institute in September, 1894, attention was directed to the great superiority of "saturated" over "superheated" steam as a disinfecting agent. By "saturated" steam is meant steam at the temperature at which it is generated, and which, of course, will vary with the pressure under which the water is boiled; "superheated" steam, on the other hand, has had the temperature at which it was generated raised by the subsequent direct application of heat, *e.g.*, by coming in contact with a hotter surface than itself. The practical application of this fact as regards the "Nottingham" and "Lyons" disinfectors is that the pressure of steam in the jacket should not be greater than the pressure in that portion of the apparatus in which the clothes are placed, and I think that it is not unlikely that the freedom from scorching and discolouration which we have enjoyed may be due to attention to this point.

Another matter of some importance in this connection is that the air contained within the disinfecting chest should as far as possible be expelled in order that the disinfecting medium may consist solely of steam, and not of a mixture of air and steam. At first sight it would seem that this might be easily effected by employing the "exhaust" with which the "Nottingham" apparatus is fitted, but on repeatedly testing the effect of this "exhaust" by means of a vacuum gauge, I found that it was practically nil, as the gauge needle never left the resting peg. The air may, however, be expelled by allowing a current of steam to pass through the chest for some minutes after the doors have been screwed up, but the practical question arises, "How long should this steam current be employed?" Professor Delépine, of the Owens College, has recently been good enough to go carefully into this matter with me, and has devised a cheap and simple indicator which answers its purpose admirably, and obviates the necessity for the powerful and expensive vacuum-pumps which have been supplied with some of the most recent forms of steam-disinfectors.

Disinfection of Infected Premises has been energetically carried out. Walls, floors, furniture, &c., have been washed with corrosive sublimate solution, and in some instances fumigated while damp with sulphurous acid gas. This fumigation has, however, been carried out only in deference to popular opinion and has now for some time been dispensed with. It is hopelessly unreliable under the ordinary conditions of practice, and is, in addition, wrong in principle, for it should not be our object to attempt to purify infected air, but rather to get rid of it altogether by free ventilation. In connection with sulphur fumigation your Disinfector reported to me that in one room in which all the perceptible apertures had been sealed up, a cat was accidentally left for several hours. When found it was unconscious, but it eventually recovered.

Recent researches go to show that chlorinated water (a 1 per cent solution of bleaching powder) is one of the best and cheapest disinfectants that can be employed, but its application by a brush or syringe to walls, &c., is accompanied by the evolution of chlorine in such quantities as to greatly irritate the eyes and throats of the men employed.

During the year the infected rooms in 305 dwelling houses were cleansed and disinfected ; 4,476 articles were disinfected by steam, and 351 inmates of infected houses were bathed.

METHOD OF DEALING WITH CASES OF INFECTIOUS SICKNESS.

An inspector at once visits each case reported, and is provided with directions as to points for systematic inquiry in regard to possible sources of infection means of isolation adopted and available, sanitary condition of premises, &c. Wherever isolation at home appears to be impracticable, removal to hospital is advised and is rarely seriously objected to. The healthy inmates of the infected house are when necessary taken to the disinfecting station, where they are bathed whilst their clothing is being disinfected. A supply of colored corrosive sublimate solution is furnished : cautionary notices are left at the house and those on each side of it, and if the case is not removed, a post card is left for signature by the medical attendant, and is returned to this Department when the case terminates and disinfection of the premises can be carried out. A notice is in addition served on the parents requiring them to keep the other children from school and communications are sent to the schoolmaster, to employers of labour, and to the public librarian. In cases presenting any suspicious grouping or obscure features I enquire personally into their history, and in this way during the year 1894, have investigated a large number of cases. I have from time to time interviewed many of the schoolmasters of the town in order to secure their valued co-operation. In addition I have personally questioned the scholars in one large school, and separately examined each of those presenting any suspicious symptoms. Finally, in regard to disinfection, I wish to point out that to make your system still more perfect, the provision of one or two properly warmed waiting rooms for the temporary reception of those whose houses are being disinfected, is very desirable. It is also desirable that some means of warming the existing bath and dressing rooms be adopted, and that a w.c. be provided in connection with the station.

Cemetery.

This consists of 28 acres of sandy mould overlying boulder clay, and of a known depth throughout of at least 20 feet, situated about a mile from the centre of the town and between the Buxton Road and the Tin Brook. It has been in use for more than half-a-century. There is no great aggregation of houses in the immediate vicinity.

In Stockport metallic coffins are frequently referred to as "Sanitary," and from time to time persons who can ill-afford it incur additional expense to obtain one in cases of infectious disease. This idea is, however, quite erroneous, for the frailest coffin that will decently and safely retain its contents till burial is effected, and thereafter afford least resistance to the processes of decomposition is undoubtedly the most "Sanitary."

Public Water Supply.

A detailed report on the past history and present condition of the water supply of the borough was presented to the Water Inquiry Committee by the Medical Officer of Health and adopted by them on 25th April. The report was further considered and adopted by the Council at a special meeting held on 11th July.

On the 24th August a supplementary report was presented to the Water Committee dealing with a criticism by the Chairman of the Water Company in reference to the map which accompanied the first report, and with his allegation that the report was sent to the medical journals before the Company had an opportunity of pointing out any inaccuracies in it. The Committee, by resolution, expressed themselves satisfied with the accuracy of the plan having regard to the explanatory note issued in reference to it, and placed on record the facts that the report was in the hands of the Company seven weeks before any reference to it by any medical journal, and that the Committee had failed to find any evidence whatever to support Mr. Hill's statement that the alleged inaccuracies in it were copied into medical journals. This was confirmed by the Council on 5th September, 1894.

On 12th November, 1894, the Sanitary Committee had before them a letter from the Local Government Board dated 6th November enclosing an extract from the Annual Report for 1893 of the Medical Officer of Health for the Hayfield Rural Sanitary District respecting the pollution by the drainage from Drake Carr and other houses in that neighbourhood of a reservoir belonging to the Stockport Water Company. It was stated that the amount of pollution was very considerable and ought to be prevented as soon as practicable. In consequence, however, of the action of your Water Inquiry Committee this cause of pollution, as well as other objectionable conditions of refuse disposal, had been satisfactorily dealt with. (*Vide* minutes, Sanitary Committee, 12th November, 1894.)

In the month of October numerous complaints as to the quality of the public water supply were received, accompanied in several instances by samples of water containing a good deal of sediment. At the same time the Water Company intimated that discoloration might be anticipated in consequence of a serious accident on the Manchester Works, but no information as to the nature or proximate cause of this discoloration was furnished.

At p.p. 52 and 57 of my 1893 report I called your attention to the desirability of effecting a more advantageous and equitable arrangement with the Water Company in regard to the heavy cost of water used for flushing the public sewers. The matter had already been brought under the notice of the Highways and Sewers Committee by the Borough Surveyor, and Mr. Councillor J. G. Johnson, J.P., was delegated to see the Waterworks Co. on the subject. On June 20th, 1895, Mr. Johnson reported that he had succeeded in inducing the Directors to make the following reductions, viz.: That instead of charging each flushing chamber separately, the water supplied to all of them would be treated as one item, which would considerably reduce the total cost, as the charge would now be 1s. to 1s. 3d. per 1,000 gallons, instead of about 1s. 6d. per 1,000 as hitherto.

According to the Company's ordinary scale of charges per 1,000 gallon for water delivered per meter during each quarter, 50,000 gallons is supplied at the rate of about 1s. 6½d. : 100,000 gallons at about 1s. 3½d. : 250,000 gallons at about 1s. 0¼d. : 510,000 gallons at about 10d., and all above 510,000 gallons at the rate of 6d per 1,000 gallons.

Last year I offered the suggestion that in regard to cost you might possibly find it advantageous to provide and utilize deep well water for certain municipal purposes, but as then pointed out this is a question for your Engineering and Financial Departments.

In connection with the subject of the Public Water Supply I cannot do better than recall the recommendation of the Local Government Board submitted by Dr. Bruce Low, on 22nd January, 1894 :—

> "WATER SUPPLY.—The Authority, with the assistance of their Medical Officer of Health, should continue to take every means in their power to ensure that the public water supply of the borough is pure in quality and adequate in quantity."

By bringing about the removal of certain very unsatisfactory conditions of refuse disposal already referred to as having existed on the Disley Gathering Ground, the Sanitary Authority have undoubtedly done much to promote purity of the Lyme Water, and I think there is now no reason to regard the supply from that source as other than an excellent one. Nevertheless *occasional* bacterioscopic examination of the filter effluents is, in my opinion, very desirable, if filtration is to be practised at all, and on the latter point Professor E. Frankland, F.R.S., has recently said "I think the time is not far distant when Parliament will require that all surface-water shall be filtered before distribution and it may even be considered necessary that deep well-water should also be submitted to the process in view of the risk occasionally incurred by the presence of the workmen in the wells." I therefore wish again to direct attention to the final recommendation in my Special Report of last year, as to the importance of acquiring, *if it be possible*, for any person duly authorised on that behalf by the Corporation, the *right* of entry at any time by day or night to every part of every source from which the public water supply is obtained, and more especially to those places in which filteration or purification is effected. Further, while it is, of course, only fair that an official of the Company should be present on their behalf whilst samples of their effluents are being taken, I assert that for obvious reasons in the public interest, it is not for any water company to require any notice whatever prior to that given at the moment of entry on the works, nor to dictate as to where and when the samples of water may be taken.

In regard to the adequacy of the public supply, in view of the fact that since the commencement of the labours of the Water Inquiry Committee the Company have sunk a new deep well at Wilmslow capable of yielding 800,000 to 1,000,000 gallons per day, it may reasonably be hoped that the suffering and discomfort of an insufficient water supply may be in future entirely avoided.

Public Baths.

The Public Baths opened in 1886 are exceptionally good. A first class hot bath costs 4d, a second class ditto 2d. Admission to the first class plunge bath costs 6d. before, and 3d. after 12 o'clock noon. The second class plunge bath is used chiefly by boys to whom a charge of 1d. each is made. Turkish and vapor baths are also provided. The water in the plunge baths is changed twice a week. The average number of bathers per week was 1,229 in 1894.

Meteorological Station.

The instruments which have hitherto been in Vernon Park have been removed and are about to be erected in the Town's Yard, and Mr. Thomas Kay, J.P. has generously presented the following additional apparatus:—

Sunshine Recorder, 1 ft. and 4 ft. Earth thermometers, 2 Solar Radiation thermometers, and a Terrestial Radiation thermometer. It is hoped that the station will shortly be completed and daily records will then be taken and reduced under the supervision of the Medical Officer of Health.

Chief Industries.

Felt-hat making, cotton-spinning, bleaching, weaving, and printing are the chief industries of the town, but there are several large breweries and other important commercial undertakings. The influence of these various occupations on the health of the operatives engaged therein is a subject for future inquiry.

The Rivers Mersey, Goyt, and Tame.

These are, of course, at present grossly polluted with the sewage and trade effluents of this and other towns. My attention has been drawn to a portion of the river bank at the bottom of Ford Street, the present condition of which is very objectionable, but which might apparently be easily reclaimed and converted into a valuable plot of land.

The Housing of the Working Classes.

In the oldest portions of the town, the houses occupied by the poorer classes are, as a rule, very insanitary, having been built many years ago, and quite regardless of the principles embodied in your modern bye-laws. In these black spots, cellar dwellings and back-to-back houses are numerous, privy midden nuisances, defective conditions of internal and external air-space and lighting, &c., abound. In many cases the houses have no slopstones, and the tenants will not carry their waste-water to the nearest grid, but throw it on to the street or yard, the latter being often unpaved. In other cases, yards are intersected with long imperfect brick channels or gutters which cause great offence in warm weather, and danger during times of frost. It is obvious, however, that for several reasons the removal or amelioration of these houses must of necessity be gradual.

In districts of recent growth the houses of the poorer classes are very much better in every respect, but the very general existence in connection therewith of privy-pits instead of water-closets is very unfortunate.

A census has been recently taken by your Inspectors in regard to the number of (*a*) Back-to-Back Houses, (*b*) Small Single Houses without through ventilation, (*c*) Cellar Dwellings, with the result shown in the following table:—

District.	Wards.	Back-to-Back Houses	Single Houses	Cellar Dwellings
No. 1.	Spring Bank (most of) St. Mary's ,, ,, St. Thomas's ,, ,,	205	309	90
No. 2.	Old Road Lancashire Hill Heaton Lane	426	91	109
No. 3.	Portwood Vernon Hempshaw Lane Heaviley St. Thomas's (very little)	265	72	13
No. 4.	Hollywood Edgeley Shaw Heath Cale Green Spring Bank (part)	367	114	43
		1263	586	255

ACTION TAKEN UNDER THE HOUSING OF THE WORKING CLASSES ACT, 1890.

During the year 1894 the following houses were reported to you as unfit for human habitation, and notices were shortly afterwards served on the owners:—

10 Pearson's court
8 and 10 Ratcliffe street
11 Royle street, Higher Hillgate
1, 3, 5, and 7 Mason's Buildings, Shaw Heath
12 and 14 Barlow street
2, 3, 4, 5, 6, and 7 Bates' court.

With regard to the list of houses represented to you on 18th December, 1893, as unfit for human habitation, I have to report that

(1) In regard to the undermentioned dwellings such repairs were effected on receipt of the first notice as rendered them, at any rate temporarily, fit for occupation :—

2 and 4 Moss court, Port street
4 and 22 Bridgefield street
23, 25, 27, 28, 31, 33, 35, 58, 60, 62, 64, 66, and 68 Daw bank

(2) The following were disused as human habitations and converted into stores or workshops :—

103, 105, 107, and 109 Daw bank
8, 10, 12, 14, 16, 18, and 20 Wesley street

(3) 1, 2, 3, 4, 5, 6, and 7 Marigold place and the tenements above these dwellings known as the "School Rooms," were demolished by the owners.

(4) On account of failure of certain owners to avail of the very ample opportunity afforded for complying with the original notices, the following 53 houses were again minutely inspected by the Borough Surveyor and myself in November, 1894. A detailed statement of the shortcomings of each house, and as to the practicability and nature of the repairs necessary, in our opinion, to make each habitable, was drawn up by me in a report to your Town Clerk, by whom proceedings were taken against the owners on 18th December, 1894, and closing orders obtained in every case with penalties varying from costs to 20s. and costs :—

6, 8, *18, and 20 Adlington square
1, 2, 3, and 4 Colliers court
1, 2, 3, and 4 Aspinall's court
1, 2, 3, and 4 Mulberry court
82, 84, 86, and 88 High street
1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 17, 19, and 21 Daw Bank
2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, and 28 Walker's Court
*70 and the house (now demolished) behind 70 Daw Bank
*3 Isaac street, King Street West
2 Robinson's court, Heaton lane

Those marked with an asterisk have since been made, at any rate temporarily, habitable.

House-Drainage.

In the older parts of Stockport, as of most other towns, house drains are of the objectionable square bricked or flagged pattern. Occasionally, untrapped openings to these drains, within or close to the dwellings are yet to be found, and in a small and rapidly decreasing number of cases the slopstone waste-pipe is directly connected to the sewer, or inefficiently disconnected therefrom by a simple syphon-bend beneath the sink-tray. In addition to the water from the slopstone, these old drains receive the rain and surface water, and in some cases urine, &c., from the house, though too often the latter is thrown into the ashpits, and is an important cause of their offensive condition. These old drains are, of course, not disconnected from the sewers, and are ventilated through the rainwater pipes and through such untrapped openings as stlll exist.

In new buildings, glazed earthenware socketed pipe drains are insisted upon, but so far cement-joints have not been required, puddled clay being used instead. This is very unsatisfactory, as all drain-joints should be capable of resisting the water test, which puddled clay will not withstand. With regard to ventilation and disconnection, the custom in Stockport of building in blocks of six or eight houses or more, with a 9-ft passage between the blocks, admits of everything being drained to the back except rainwater from the front-roof. Every house has a separate drain within its own curtilage leading to the branch sewer in the 9-ft. passage at the rear. The drain of every new house provided with internal water-closet, bath, lavatory, &c., must have a separate ventilating shaft and disconnecting trap. If, however, the houses have no internal drainage fittings, it is deemed sufficient to place one disconnecting trap in a brick chamber at the junction of the branch-sewer (in the 9-ft. back passage) with the sewer in the public street, and to provide a 4-in. ventilating pipe for every 3 or 4 houses, and a large ventilating shaft at the highest point of the system of drains belonging to each block. This arrangement is found to work well, and I am fully in accord with the Borough Surveyor, who is responsible for it, as to its efficiency for practical purposes.

In reports presented to the Sanitary Committee at various times, I have drawn attention to the facts that the rainwater pipes were, as a rule, connected directly to the drain without the interposition of a gully-trap; that the joints of these pipes were as a rule open, and that in many instances such pipes were close to bedroom windows. It is satisfactory to record that in regard to new buildings disconnections of these pipes at foot is now insisted upon, and that airtight joints are also required. Of course, large numbers of these pipes in old property are still open-jointed, but on the 14th August, 1893, the Sanitary Committee passed a resolution requiring all such joints to be made good, and a considerable improvement has already been effected.

Sewerage System. *

This consists of—

(1) A FEW OLD SQUARE FLAGGED SEWERS.

(2) SEVERAL BROOK-COURSES AND BROOK-CULVERTS.

(3) COMPARATIVELY RECENT AND NEW SEWERS.

(4) THE INTERCEPTING SEWERS AND OUTFALL WORKS.

(1) A FEW OLD SQUARE STONE AND BRICK SEWERS still exist in the older parts of the town. The most important of these are in Park Street, part of Millgate (from Corporation Street to Market Place): Warren Street: Vernon Street: Great and Little Underbank: Bridge Street: Lower Hillgate: High Street: King Street East: Corporation Street: Brinksway, from the Borough boundary towards Northgate Street. Total length, 1½ miles.

These sewers are without any means of ventilation except through such rainpipes and untrapped openings as communicate with their branches. Access to them for cleansing purposes can only be obtained by digging down to them, a measure which has occasionally to be adopted to remove obstructive accumulations of deposit. Their very steep gradients (in most cases) render these old sewers much less liable to obstruction, however, than in towns such as Leicester, where the sewers possess little fall.

It may be here recorded that in some streets duplicate sewers exist, the old one not having been removed when the more modern one was made, and some houses still drain into the old original sewers where new ones exist in the same street.

It is, of course, very desirable that these old defective sewers should be replaced by sewers of modern construction, as soon as it can be afforded, and this matter is receiving the attention of the Highways Committee.

(2) BROOK-COURSES AND BROOK-CULVERTS.—The most important of these are four in number, so far as I have been able to learn with the valuable assistance of the Highways Department:—

A. Heaviley or Black Lake Brook.—Formed by (*a*) a stream which originates at Cherry Tree Farm, passes behind Messrs. Haines' Towel Factory, through Lake Street, across Buxton Road (opposite Mile End Hall), along the Bramhall side of the road to near Pear Tree Cottage, where it recrosses the Buxton Road, and passes to the east of Heaviley Schools, the Bamford Arms, and the Cemetery to join Hempshaw Brook, and thence to the Tin Brook.

(*b*) A stream which commences near Stepping Hill, passes under and receives the sewage from a number of houses on the eastern side of the Buxton Road, and joins the preceding stream at the junction of Lake Street and Buxton road.

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* I am indebted to the Highways Department for much information on this subject.

(c) A stream on the western side of the Buxton Road, in the district of the Stockport Rural Sanitary Authority, commencing in the neighbourhood of the "Dog and Partridge," and eventually entering a pipe sewer on the ground of the Mile End Nurseries, through which it passes into (a).

It is known that the sewage from several houses in Kennerley Grove Lane on Buxton Road, at the south side of Park Road and on the south side of Woodsmoor Lane enter this Brook, which is, as already stated, outside your Borough.

B. Brownhousefold Brook.—This receives the drainage from a few houses in the Offerton Lane, and from Victoria Park. It joins Hempshaw Brook, and eventually the Tin Brook.

C. The Tin Brook is a continuation of the Hempshaw Brook formed by the junction of Heaviley and Brownhousefold Brooks. There is no property drained directly into the Tin Brook itself, for in 1871 a sewer was laid adjacent to the brook course, and the owners of all property draining thereinto, was compelled to connect their drains to the new sewer.

As the waters of the 3 preceding brooks are conserved for manufacturing purposes, it is desirable that their contamination by sewage should be prevented as soon as possible.

D. A brook commencing (?) in the neighbourhood of Daw Bank and Gradwell Street, passing in a north-westernly direction through the district of Wood Street, and across Chestergate to the river. The influence which this brook has had on the position of the blocks of houses which used to drain into it, and which were built parallel to that portion of the stream which they faced is still perceptible.

E. Stitch Brook, Heaton Norris.—This receives the drainage of the district of Whitefield and part of Wellington Road North, and also that from Manchester Road and part of Old Road. This brook, which is a Public Sewer, is culverted and passes under no property, traverses Brunswick Street, and eventually gets into George's Road sewer.

(3) COMPARATIVELY MODERN AND NEW SEWERS (ABOUT 50½ MILES).—I am informed that most of the remaining sewers of the town are of comparatively modern construction. The mileage of those made prior to 1870, is 28¾; those made since that date have a mileage of 21¾. Some of these are pipe-drains, others are round or oval brick sewers. Manholes and lamp-holes to the number of about 1,100 for purposes of ventilation, are placed alternately at distances varying from 150 yards in the older sewers, to about 50 yards in those of recent construction. A lamphole is provided at the dead end of each sewer. Each lamphole consists of a 9-inch. pipe shaft from crown of sewer to surface of road, over which is placed a perforated cover 12 in. in diameter. Since 1893, the Highways Department has adopted a new form of rectangular cover to prevent ingress of dirt to the sewer. The manholes are 2-ft. 6-inches square in the shaft, but widen out below forming a chamber 2½-ft. by 5-ft. The only other means of ventilation on most sewers is through the rain-pipes.

During the year the provision of shaft ventilators carried up the sides or ends of houses away from all windows and chimneys made substantial progress. Fifty-four have now been erected in the areas most affected by typhoid in 1893, and the desirability of widely extended provision of these shafts is, I am aware, fully recognized by you. In many instances a shaft has been erected close to a continually offensive manhole and where the offence has still persisted the Surveyor's practice has been to occlude the manhole with a tight-fitting iron lid which is only removed for purposes of inspection. The result of this procedure has hitherto been very satisfactory.

In regard to the provision of flushing apparatus, whereby every sewer may be flushed from its upper or dead end, the Borough Surveyor has kindly furnished the following

LIST AND DESCRIPTION OF AUTOMATIC FLUSHING TANKS :—

POSITION.	DESCRIPTION.	ACTION.
1.—Dialstone Lane near Buxton Road end, Stepping Hill (top of sewer).	1,200 Gallons capacity, "Field's" syphon 12-inch discharge outlet.	Flushes Dialstone Lane and Boothby Street sewers.
2.—Dialstone Lane at junction with Cherry Tree Lane (top of sewer).	800 Gallons capacity "Field's" syphon, 12-inch discharge outlet.	Is intended to effect the same purpose when deemed requisite.
3.—Grenville Street, Edgeley, at junction with Castle Street,(top of sewer).	400 Gallons capacity "Adams" syphon 9-inch discharge.	Flushes Grenville Street, from Castle Street towards Hollywood and Brinksway.
4.—St. Matthew's Road at junction with Castle Street.	400 Gallons capacity "Adams" syphon 9-inch discharge.	Flushes St. Matthew's Road and Chatham Street, towards junction of Grenville Street
5.—Bury Street, Heaton Norris, at top of sewer at Borough Boundary near Sandy Lane.	200 Gallons capacity "Adams" 6-ince discharge.	Flushes Bury Street sewer throughout, down to Smith Street and thence through same towards Penny Lane, and so to Nicholson Street East.

WHEN DISCHARGED :—

No 2 has not been put into operation yet as there is no property along the line of the sewer.

The others are arranged to discharge every 48 hours in summer, and every week in winter.

In addition to the foregoing, a movable flushing apparatus, capable of rapidly discharging 300 gallons at any lamphole over which it is placed has been provided, but it is of very small capacity compared to the flushing vans in use at Salford, Leicester, &c., some of which hold 1,000 to 1,500 gallons.

The importance of perfecting as far as is possible the system of sewer cleansing and ventilation cannot in my opinion be exaggerated in regard to its influence on the public health. In an important report presented by the Special Purposes and Sanitary Committees to the Metropolitan Board of Works in 1886, the simultaneous and copious flushing of house drains by householders on stated days and hours is recommended as one of the most effectual means of flushing the sewers, and it seems probable that a great number of householders would be willing to co-operate with you in thus improving the condition of the sewers in your district. Apart from this however, I beg again to direct your attention to the necessity which I believe exists for the provision of one or more large flushing-vans, and of many more larger automatic flushing tanks, in order that each main, district, and branch sewer may be efficiently cleansed from its upper end.

Two important reports by Messrs. Andrewes and Parry Lawes, "On the Micro-Organisms of Sewerage and Sewer Air' were published by the London County Council during the year. These workers conclude that there is no relation whatever between the micro-organisms of sewage and sewer air, but they expressly lay down that their experiments and conclusions do not apply to the air of ill-constructed sewers in which splashing occurs, or in which there is only an intermittent flow of sewage, or in which the sewage becomes stagnant and putrefactive. In other words, they exclude most of the conditions usually associated with offensive sewer emanations, and which exist to a greater or less extent in practically every sewerage system. They are of opinion that sewer air plays but a small part in the dissemination of diphtheria, and whilst admitting that typhoid fever stands on a very different basis, they believe that much has been erroneously ascribed to sewer air which is really largely due to subsoil air polluted by constant infiltration of excremental matter.

These researches very clearly emphasize the importance of having well-constructed water-tight sewers and drains, of keeping them well ventilated and well flushed, and of preventing soil pollution by abolishing midden privies.

It is very important and satisfactory to record that on the 6th December, 1894, the Highways and Sewers Committee requested the Sewage Outfall Committee to supply the Borough Surveyor, through Mr. Fowler, the Engineer to the Sewage Works, with a tracing of the whole of the intercepting sewer within the borough boundaries, showing the depth and position of all manholes, ventilators, and other shafts, in order to enable the Surveyor to investigate the following matters, viz.:—

(1) The sufficiency or otherwise of existing sewers, and the replacing of defective brick or pipe sewers along the valley from Brinksway to Portwood.

(2) The reversal of existing sewers now flowing into the river.

(3) The provision of sewers in roads where none now exist.

(4) The provision of sewers at several parts of the Borough to prevent pollution of watercourses.

(5) As to bringing up of manholes, &c., now buried, and the provision of sufficient surface and tall shaft ventilators on the old sewers.

It was pointed out by the Borough Surveyor that these matters were necessary in order to place the Corporation in a position to say at the completion of the sewage works that no foul matters were being discharged into the river, and also to enable notices to be served upon the property owners now polluting the river and watercourses to reverse their drains. He also stated that the inadequacy of the sewers in the older parts of the town often prevented the requirements of the Health Department as to abatement of nuisances from being carried out.

THE INTERCEPTING SEWERS AND OUTFALL WORKS.

The sewage and rainfall requiring to be dealt with in the Borough are at present discharged direct into the river within the Borough from about 30 main-outlet sewers and watercourses. To intercept this sewage and surface water, very extensive works are being carried out under the supervision of Mr. A. M. Fowler, M.I.C.E. at a cost of about £100,000. The principal feature of the Engineer's scheme is the provision of 5 main intercepting sewers, the course of which may for the purpose of future reference be very briefly outlined as follows:—

1st Main Sewer (3-ft. to 7-ft. diam). Commences opposite Vernon Park Gate, traverses Carrington Road, Great Portwood Street, Wharf Street, and thence beneath Castle Hill to opposite the White Lion, in Underbank, and forward through Chestergate, Brinksway and Cheadle Heath, to terminate at Heathside Farm on the left bank of the Mersey, 300 yards west of Messrs. Melland and Coward's bleachworks.

2nd and 3rd Main Sewers (12-in. to 18-in. and 18-in. to 24-in. diam). Both commence near Stringer Street, Newbridge Lane. One passes eastward and the other westward to join the 1st main sewer near Vernon Park, and the east end of Queen Street, respectively.

4th Main Sewer (3-ft. diam) Collects sewage from district between Lancashire Hill and the River Tame, crosses beneath junction of Rivers Tame and Goyt, and traversing King Street, joins the 1st main sewer near Queen Street.

5th Main Sewer (18-in. diam). Will intercept sewage from Heaton Norris side of river, tapping the important main sewer in Heaton Lane, Travis Street, and Brinksway Road. Commencing near Brinksway Bridge, it crosses almost at once in a straight line under the bed of the river to join the 1st main sewer on the Brinksway side.

Ventilation is to be effected by openings in the carriage way and the erection of shafts on buildings, away from windows, &c. In view of recent experience in Stockport and elsewhere, it is to be hoped that it will be found possible to erect a sufficient number of the latter to obviate to a large extent, the necessity for road surface ventilators. At the Outfall Works the sewage will be pumped 17ft. 6in. into tanks, there treated chemically, and then discharged intermittently upon underdrained and levelled filter beds, through which the effluent thus purified will pass into the river. The Corporation possess 95 acres of land at Heathside Farm and it is proposed to appropriate by degrees 63 acres for sewage purification. The Engineer states that it is well adapted for this purpose, being composed of sharp gravel and sand.

Mr Fowler has made provision in the outfall sewers for the sewage from upwards of 140,000 people, and at the Outfall Works, which can at any time be extended, for dealing with the sewage of 107,400 persons, the figures at which he estimates the population 30 years hence.

I am informed by the Engineer that a considerable portion of the first main sewer has been completed, viz., from the Outlet at the river to opposite the "White Lion," Underbank, and that it is at present being continued under the Castle Hill, into and along Great Portwood Street. The Outfall Works are well advanced, the eight reservoirs being nearly finished: the buildings to contain the boilers, centrifugal pumps, mud-pressing machinery, chemicals and stores are roofed in, and the combined engines and pumps are being built in their permanent positions by the makers.

Excrement and Refuse Disposal, and Scavenging.

It is estimated that there are at present between 5,000 and 6,000 privy-pits and some 1,500 water-closets with dry ashpits, including 330 closets of the slop-water type. These clean-water and slop-water closets are to be found chiefly in recently-built houses and are gradually increasing in number. The provision of closet accommodation to mills is, with a few exceptions, in an unsatisfactory condition, and though notices under the Factory Act to remedy this defect were last year drawn up by the Borough Surveyor's Department, I understand that hitherto pressure of other work has unfortunately prevented their service and enforcement. Some large schools, moreover, possess only the objectionable midden-privy closets, but there has been some improvement in this respect during the year under present notice. In one large mill, in two schools, and in a few other isolated cases pail closets are used. In a few instances in the Newbridge Lane district closets discharge directly into the river or on to the banks and necessarily occasion much offence.

I feel that no duty which your Medical Officer of Health can be called upon to perform is so important, pressing, and, perhaps, unpopular, than that of urging upon the Council **the necessity of early and seriously facing the evils of the existing defective and mediæval midden-privy system which, in the words of the official memorandum presented to you last year by the Medical Department of the Local Government Board, is "a source of nuisance of the gravest kind and cannot fail to be injurious to health."** I have pointed out on previous occasions that many of the existing privy-pits especially in the older parts of the town are faulty in the extreme; none that I know of can be considered really satisfactorily watertight, while a very large number being very leaky are responsible for wholesale soil-pollution. In many instances these foul receptacles are within a few feet of the door, and I know of many actually abutting on the walls of dwelling houses (there were 186 in 1885 and the great majority still exist), their liquid contents, of course, soaking into the foundations. In a few instances privies are situated under occupied rooms, but these are at present being dealt with. In the newer parts of the town where houses are built in terraces one privy-pit ordinarily serves for two houses, but in the numerous courts of the older parts, where air circulation is at a minimum, one enormous fosse usually exists in the middle of the yard, the common receptacle for the excreta and house refuse of the occupants, of from six to, in one case, 36, and in another 40 habitations. Owing to their size, structural defects permitting dampness, and the very usual deposit therein of slops, vegetable and animal refuse, these pits are generally excessively foul, and the air of the courts in which they are situate offensive to a degree which must be experienced, especially in hot weather, to be realized. Further, atmospheric pollution and fouling of the surface of yards and streets, of gullies, drains, and sewers, which is inseparable from the most careful scavenging of these privy pits, is an ever present nuisance of the most aggravated kind, and in regard to some 80 houses of which the Night Inspector has recently prepared the appended list, (page 64), the privy contents have to be carried actually through the living rooms, but action is at present being taken with the approval of the Sanitary Committee in regard to these.

As to the manner in which human health, apart from comfort, is liable to suffer from such conditions it is only necessary to refer to the typhoid outbreak of 1893 in which the influence of midden-privies in disseminating the disease afforded such remarkable confirmation of the well-known official words of the late Sir George Buchanan, M.D., F.R.S. :—"In enteric fever the evacuations should be regarded as capable of communicating an infectious quality to any nightsoil with which they are mingled in privies." I have elsewhere alluded to the opinions formed by Messrs. Andrews and Laws (as the result of patient inquiry relative to the micro-organisms of sewer air) that much in the way of typhoid (and perhaps diphtheria) that has been erroneously ascribed to sewer-air is "really largely due to subsoil air polluted by the constant infiltration of excremental matter." I have also commented upon the terribly excessive mortality from infantile diarrhœa which persistently inflates the Stockport death-rate, and I desire to place on record my opinion that without any manner of doubt it will continue to do so as long as wholesale pollution by leakage from midden-privies continues to supply the soil with the putrid excremental organic matter known to be so favourable to the life-processes of the micro-organism associated with this malady (*vide* page 32). Finally, the following significant figures as to the mortality from these filth-diseases (typhoid and diarrhœa) in Stockport as compared with England and Wales, speak for themselves.

DEATH RATES PER 1000 IN

	STOCKPORT.											England and Wales
YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1884 to 1893	1884 to 1893
Typhoid Fever	0·35	0·23	0·55	0·54	0·47	0·1	0·2	0·2	0·2	0·67	**0·35**	**0·17**
Diarrhœa	2·1	0·74	1·3	1·2	0·7	0·7	1·1	0·9	0·7	2·70	**1·21**	**0·73**
All Causes	24·9	26·9	26·4	26·9	25·03	23·5	26·5	26·9	22·7	23·9	**26·2**	**19·2**

In reporting so plainly and strongly on these matters, I believe that I am only acquitting myself of *the* most serious responsibility of my office I am also certain that the evils I have referred to are to a large extent recognised and deplored by the Chairman and Members of the Sanitary Committee and Council generally, and I am aware that the vastness and great difficulty of the question together with the hitherto imperfect sewerage system and the incubus of important works of general improvement are the chief reasons that it has not up to the present been comprehensively dealt with by you. It is true that by resolution of February 19th, 1894, the Medical Officer of Health was "empowered to require any insanitary privy which is a nuisance or injurious to health to be abolished and a water-closet substituted therefor," but proceedings under this resolution have not so far been enforced to the extent that could be desired by those who view the matter mainly from the point of view of the public health. Although the result of a recent Local Government Board Inquiry in Sheffield has been to very explicitly uphold the right of a Sanitary Authority to insist upon the provision of waterclosets in lieu of insanitary or insufficient privies, I admit that there are practical difficulties in the way of doing so, for *all* the older privies, and to a lesser extent *all* the new ones also, are a nuisance and injurious to health, and until some general scheme is promulgated many property owners are very ready to resent as invidious and unfair any attempt to enforce water-closets, no matter how grossly insanitary the existing conditions may be. I therefore submit, especially in view of the approaching completion of your sewerage scheme, that the time has now arrived for seriously considering what is without doubt by far the most pressing present requirement of your Borough, and that most essential to place Stockport, as all hope eventually to see it, in the van of the healthier manufacturing communities.

Apart from the question of the danger to health occasioned by the present system I beg to direct your attention to its very heavy cost. The Borough Treasurer has kindly extracted for me the expenditure on Night Scavenging alone for the 12 months from 1st January to 31st December, 1894, which totalled some £5,200, excluding capital charges. Assuming that the Corporation decided to contribute in suitable cases towards the conversion of existing midden privies the annual saving of this large sum, which would eventually result from the general adoption of the water-carriage system, would probably in a very few years cover the cost of any reasonable assistance to property-owners. I would therefore suggest that the financial aspect of this question might with advantage be referred to the Borough Treasurer.

The same question has had to be faced and is being dealt with in many other towns. The Corporation of Bolton has obtained borrowing powers for the purpose of assisting conversion of midden-privies; Leicester is now applying for £35,000 for the same object; Leeds and Sheffield are contributing one-third of the cost in suitable cases, and the towns of Burslem and Hanley, which are much smaller than your Borough, have adopted a similar wise policy, the former paying one-half the cost out of the General District Rate.

Pending the consideration and adoption of some such scheme in Stockport **it is most desirable that the erection of privies in connection with new buildings be prohibited.** When so much money is being expended on intercepting sewers and on scavenging the existing privies, and when the nuisance from the latter is already so aggravated, it is surely unsatisfactory and discouraging to find that privies have been erected in connection with 84 new buildings during the year 1894. Further, a minimum superficial area of 4-ft. by 5-ft. is insisted on by resolution of the General Purposes Committee dated 21st March, 1894, which also permits these receptacles to be "not more than two feet below the level of the adjoining ground." I would therefore again suggest that this resolution might with advantage be reconsidered, inasmuch as the model bye-laws recommended by the Local Government Board order that a fixed receptacle must be in every part *three inches above the ground* level and its capacity must not exceed eight cubic feet

Scavenging: Its efficiency or otherwise.

Hand-in-hand with the subject of the foregoing section is that of scavenging of privy and ashpits. This work is carried out at night by a staff of 18 gangs of three men, each with a cart. The contents of each privy are thrown out through the pitch-hole into a barrow by a man working inside the pit, the barrow contents are then heaped in the public road, and finally loaded into carts, which take it either to farms at Cheadle or elsewhere, or to the tips at Whitehill and Newbridge lane. Often the contents of privies are so liquid that buckets have to be used for their removal, and in spite of every care much fouling of yards, roads, and gullies must almost invariably occur. I have several times suggested that the barrows and buckets be emptied straight into the night carts instead of being first heaped upon the ground, but I am informed that this is quite impracticable as it would very materially increase the cost of scavenging.

I have again to invite your serious consideration of the practicability of a more general and methodic "block-system" of privy scavenging, particularly in the numerous cases in which one pit is used by the inmates of twelve or more houses. At present the adoption of this system is not universal in Stockport. I am informed that the main reason for this is the great variation in size of the privies, but this contention appears to me to be weakened by the fact that in at least one town, viz., Eccles, in which similar conditions exist, the introduction of the block system of working has resulted in much more efficient and economical scavenging. Another reason put forward is the very natural dislike of those using large privy pits to frequent occurrences of the serious nuisance inseparable from their scavenging. Consequently while some privy pits are emptied every three months, many others, I am informed, are scavenged but once in six or even twelve months. The shortest of these periods is about six times too long, but on the other hand it is useless to ignore the fact that the disturbance and removal of these privy contents usually occasion a much greater temporary nuisance than that arising from the half-full privy pit. I feel convinced that the whole question of night scavenging might advantageously be made the subject of inquiry and reconsideration by the Sanitary Committee or some of its members, and that even if it be impracticable to comply with the Local Government Board's recommendation of fortnightly removal, material progress in the direction of more frequent scavenging might be effected.

The following is a list of houses (prepared for me by the Nightsoil Department) the privies of which can only be scavenged by carrying the contents through a dwelling house:—

5, 19, 95 Carrington Field street: 120 Higher Hillgate: 30, 32, 34 and 36 Longshut lane east: 5-19 Small street: 6 and 8 Bosden street: 4-8, 10*, 11, 13, 15, 17*, 21-27, 29*, 12-22, 36-38, 56-58 Union street: 4-6 and 8-10 Tollbar street: 4, Sun Yard, Middle Hillgate: 42, Bamford street: 6, 12, 14, 16, 32 35*, 37*, 39*, 43, Edward street: 5, 11-17, 51-53, Ridgway lane: 5-9, Watson square: 22, 24, 26, John street: 2, Lamb street: 7, 9, 10, Holborn street: 14-24, Lead yard: 82, Duke street: 5, 7-17, 19-21, 23, Banbury street: 14, Loudon square: 10 and 31, Churchgate: "Thatched House" Churchgate (through washhouse): 7A-9, 29, 31, 33, 35, 37, 56-60, 78 and 80, High street: 5-9, Adlington square: 23 and 27, Chestergate: "Golden Fleece," Chestergate: "Just Another Inn," King street West: 25B, Shaw Heath: 23, Moseley street: 14, Park street.

At houses marked thus (*) pail closets are used.

Appended is Chief-Inspector Marshall's return of scavenging work done during the year.

NIGHT SCAVENGING DEPARTMENT.

28,664 loads of refuse have been removed from 9,928 privy pits, &c., which averages about three loads for each ashpit, and 1½ loads for dry ashpits, which is included in this total. The expenditure under this heading from January 1st to December 31st, 1894, was £5781 5s. 9d.

DAY SCAVENGING DEPARTMENT.

1,487¾ loads of refuse have been removed from 1,065 dry ashpits.
5,625 loads of sweepings have been removed from the streets.
77 ,, cinders ,, put on the streets.
293 ,, sand ,, ,, ,,
2,801 ,, water ,, ,, ,,

The expenditure under this heading from January 1st to December 31st, 1894, was £3431 16s. 2d.

Tips.

There are at present two tips within the Borough, viz., one in Newbridge Lane and the other in Charles Street, Hillgate. In addition the tipping of street sweepings and dry refuse was commenced in the open space south of Bloom Street, Edgeley, but in consequence of wise representations to the Sanitary Committee by residents, the practice has been discontinued in regard to the latter site.

Many verbal complaints were received in reference both to Charles Street, and Newbridge Lane and the deposit of faecal matter at Newbridge Lane was discontinued. In particular the master of a large school in Newbridge Lane repeatedly complained to me of the offence from this tip, and protested against being required to distribute cautionary notices amongst his pupils and to take other preventive measures whilst a nuisance such as this tip existed close to his school. He further informed me that occasionally when ventilation was very necessary he had to keep the school windows shut on account of the smell. From time to time the tipping of fishmongers' and butchers' offal here has given rise to great offence, but through the efforts of the Chairman of the Sanitary Committee arrangements have been made for the destruction by fire of most if not all of this refuse, which is decidedly a move in the right direction.

Faecal matter is, however, still deposited here in large quantities close to dwellings and to the popular pleasure resort, Vernon Park. In addition, as has been before pointed out, the tip is on the "strike" or "outcrop" of a stratum of porous Permian Sandstone, which constitutes a perhaps remote but certainly possible source of danger to the deep well water of the town.

If recourse *must* be had to tips for the disposal of a town's refuse, such sites only should be chosen as are well removed from human habitation and without danger to public water supplies, for it goes without saying that large filth accumulations close to dwellings must exercise an evil influence on the health of the inhabitants, and especially of children. Where tips cannot be obtained under the conditions named, destruction by burning is the best means of dealing with town's refuse, and even if this method be not applied to all refuse it is very desirable that butchers' and fishmongers' refuse should be thus disposed of.

Bye-Laws and Special Regulations.

The following is a list of the existing Bye-Laws, with the date on which they were sanctioned :—

1. Relating to Public Baths, 10th August, 1858.
2. Relating to the management of the Markets, November, 1862.
3. *Relating to the Regulation of Vernon Park, 25th May, 1864.*
4. As to level, width, &c., of New Streets and Sewerage thereof.
5. With regard to the prevention of Nuisances arising from Snow, Filth, and the keeping of Animals.
6. As to cleansing Footways, &c., Removal of Refuse, and cleansing of Privies, &c.
7. For the Regulation of Common Lodging Houses.
8. For the Regulation of Slaughter Houses.
9. *For the Regulation of Hackney Carriages.*

   5th August, 1865.

10. With respect to New Streets and Buildings, 6th February, 1884.
11. Dairies, Cowsheds, and Milkshops' Regulations, 2nd May, 1894.

The revision of the Bye-laws of February, 1884, with respect to New Streets and Buildings, was commenced by a special sub-committee appointed in September, 1893, but I understand that the matter is at present in abeyance. This is regrettable, for it is a most important question, the amendment of certain regulations, especially those with respect to the drainage of buildings, to privies, ashpits, &c., being very essential. When this revision is completed, it is very desirable that advantage be taken of section 23, sub-section 2, of the Public Health Acts Amendment Act, 1890, to make such revised bye-laws applicable to buildings erected before the Local Government Acts came into force.

The other Sanitary Bye-laws, though in a few minor points somewhat behind the times, are on the whole fairly well adapted and sufficient.

General Inspection of the District.

The Borough is, for purposes of inspection, divided into four districts, one of which is allotted to each of your Inspectors. The work was in general carried out to my satisfaction, and a large amount of efficient work was accomplished as will be seen from the appended summary of notices served:

Inspector.	District.	Provisi'n and repair of gully-traps and drains	Repairs & alterations of privy-pits.	Disconnection of waste-pipes from sewers.	Provisi'n of water-closets.	Removal of manure and other refuse.	Cleansing of premises	On account of over-crowding	Miscellaneous.	Totals.
J. Marshall..........	Portion of Middle, St. Thomas', and St. Mary's Wards	77	38	6	1	1	7	1	5	136
C. R. Billingham	Heaton Norris Ward........	140	58	7	...	18	30	5	59	317
C. W. Laskey .... (from Jan. 1st to May 7th)	Edgeley Ward and a portion of Middle Ward	108	17	...	2	6	7	...	10	150
J. H. May .... (from May 22nd to Dec. 30th)	Do.	141	43	...	1	7	4	...	28	224
J. S. Forster .... (from Jan. 1st to May 7th)	Portwood Ward, and a portion of St. Thomas' and St. Mary's Wards	87	7	1	2	7	1	...	9	114
W. Ramscar .. .. (from May 14th to Dec.30th)	Do.	31	24	5	...	1	5	...	4	70
	Totals	584	187	19	6	40	54	6	115	1011

In addition, in an increasing number of instances nuisances were abated and improvements effected as the result of verbal representations to property owners. As the service of formal notices was not necessary in these cases, they are not included in the foregoing table.

Demolition of foul privies and their replacement by water closets with the necessary drain connections and ventilation was effected at 67 to 71 Hempshaw Lane; 191 Hall street: Messrs. Marriott's Mill: 20 and 22 Cooper Street: 2 Monument Place: 6 Huntsman's Brow. 4 houses in School Street: 125 and 127 Old Road: 1 Isaac street: 23, 25, and 25a Shaw Heath: 110 to 130 Oliver Street: 24 and 26 Bowden Street: Prince Albert Inn, Castle Street: 19 Market Place: 1 to 4 Partington's Court, St. Mary's Gate: 2 and 4 Small Street: 8 and 10 Ratcliffe Street.

In the following statement is set forth the number of blocks of dwellings and of the included houses the drainage of which was completely rearranged during the year:—

DISTRICT.	WARDS.	BLOCKS.	CONSTITUENT HOUSES.
No. 1.	Spring Bank (most of) St. Mary's ,, St. Thomas's ,,	24	116
No. 2.	Old Road Lancashire Hill Heaton Lane	23	100
No. 3.	Portwood Vernon Hempshaw Lane Heaviley St. Thomas's (very little)	7	36
No. 4.	Hollywood Edgeley Shaw Heath Cale Green Spring Bank (part)	13	118
	TOTALS......	67	370

I have again to draw attention to the gross incompetency of many of the men who are employed by private individuals to relay drains and comply with other notices of a similar kind, and who have not as a rule, the least idea of how such work should be done. In repeated instances the Inspectors have to almost stand over such labourers, to prevent the work being disgracefully "scamped." It would be much more satisfactory, from a sanitary point of view, if, as in Manchester, such work were undertaken by the

Corporation's own men, or failing this, that a list of efficient drainlayers be registered. The extension to the provinces of that provision of the Public Health Act (London), 1891, which enacts a heavy penalty for "scamping" work done in compliance with notice, is also most desirable.

COMPLAINTS OF NUISANCES BY THE PUBLIC.

190 of these were registered in the office, and, in addition, a considerable number were made verbally to the Inspectors whilst going through their districts.

Dairies, Milkshops, and Cowsheds.

The number of dairies and milkshops on the register was 95 and these were frequently inspected. In a few instances special inspections of milkshops were made by myself in connection with cases of infectious disease, but no evidence of the spread of the disease by the agency of milk was forthcoming. The great majority of these milk vendors live in small houses, the front room of which is used for the sale of small quantities of milk, and usually in addition as a general shop also. Fortunately, however, most of the milk sold by these retailers never enters their houses, but is transferred at the door from the farmer's cart to the milkseller's. On the other hand I have occasionally noticed empty milk cans standing in yards in close contiguity to privy-pits, and it is unfortunately the usual thing to find large bowls of milk on retailers' counters exposed to the exhalations of customers and dust from the streets. This, of course, might be to a large extent avoided by placing a cover over the milk-bowl, but for some reason or other this is rarely done. In one instance during the year it was found that the cellars of the cottage in which milk was stored were used as stables for the milkman's two horses, but this arrangement was put a stop to and new stables provided.

The number of cowsheds within the borough is 19, viz., two in Heaton Norris, one in Cale Green, two in Edgeley, two in Vernon, three in Hempshaw Lane Ward, and nine in the semi-rural Heaviley Ward. During the year these places were thoroughly inspected with regard to the cubic capacity, drainage, ventilation, water supply, and general adaptability. An excellent register was thus obtained which is appended to this report. With one exception (Nangreave Farm) the cowsheds are well adapted for the purpose, being well kept, lighted, provided with means of ventilation, and supplied with water. In 10 cases the number of cows sheltered was in excess of the number permissible under the regulation which requires 800 cubic feet of free air-space per cow. Most of the cowsheds are very low-roofed, often not more than 7ft. 6in. in height, the reason being, I understand, that low-roofed shelters are supposed to keep the cows warm and to increase their milk-yield. This additional warmth is, however, at the expense of ventilation, interference with which strongly predisposes the sheltered animals to tuberculosis, and therefore if it be essential that cowsheds should be low-roofed their length and breadth should be proportionately increased to give the necessary amount of free air-space per cow.

In regard to **the consumption of tuberculous milk** the Royal Commissioners "appointed to inquire into the effects of food derived from tuberculous animals on human health," state in their recent report:—"No doubt the largest part of the tuberculosis which man obtains through his food is by means of milk containing tuberculous matter." According to their experience the condition required for ensuring to the milk of tuberculous cows the ability to produce tuberculosis in the consumers of their milk *is tuberculous disease affecting the udder.* Dr. Martin who experimentally investigated the question for the Commission writes:—"The milk of cows with tuberculosis of the udder possesses a virulence which can only be described as extraordinary." Butter, skimmed milk, and buttermilk obtained from the milk of a cow having tuberculous udder, all contained actively injurious tubercular matter. "It therefore follows," continues the report, "from the observations here recorded that it is of supreme importance to the consumers of milk that any tuberculous disease of the udder should be ascertained without delay." Inasmuch as this condition is known to be capable of becoming distinctly developed in the interval between fortnightly inspections and as it occurs with much greater frequency in cows kept in town cowhouses, it is therefore most desirable that in urban communities all milch cows be subjected to veterinary inspection at maximum intervals of a fortnight, and any cow thus affected should be at once excluded from the dairy.

Having regard to the difficulty and expense attending frequent and systematic skilled inspection of milch cows, which is so obviously desirable, it is reassuring to know "that boiling for an instant even renders the tubercle bacillus absolutely innocuous." In this connection the Commissioners remark, "In regard to milk we are aware of the preference by English people for drinking cow's milk raw, a practice attended by danger on account of possible contamination by pathogenic organisms. The boiling of milk even for a moment would probably be sufficient to remove the very dangerous quality of tuberculous milk."

The following notice was circulated extensively during the year:—

COUNTY BOROUGH OF STOCKPORT.

PUBLIC HEALTH NOTICE.

The attention of cow-keepers, dairymen, milk purveyors, and occupiers of milk stores and milk shops is hereby directed to the following provisions of the Dairies, Cow-sheds, and Milkshops Order of 1885,

VI. (1).—It shall not be lawful for any person to carry on in the district of any local authority the trade of cow-keeper, dairyman, or purveyor of milk, unless he is registered as such therein in accordance with this article.

VII. (1).—It shall not be lawful for any person following the trade of cow-keeper or dairyman to begin to occupy as a dairy or cow-shed any building not so occupied at the commencement of this Order, unless and until he first makes provision to the reasonable satisfaction of the local authority, for the lighting and ventilation, including air space, and the cleansing, drainage, and water supply of the same, while occupied as a dairy or cow-shed.

VII. (2).—It shall not be lawful for any such person to begin so to occupy any such building without first giving one month's notice in writing to the local authority of his intention so to do.

VIII. It shall not be lawful for any person following the trade of cow-keeper or dairyman to occupy as a dairy or cow-shed any building, whether so occupied at the commencement of this Order or not, if, and as long as the lighting, and the ventilation, including air-space, and the cleansing, drainage, and water supply thereof are not such as are necessary or proper.

(*a*) For the health and good condition of the cattle therein; and

(*b*) For the cleanliness of milk vessels used therein for containing milk for sale; and

(*c*) For the protection of the milk therein against infection or contamination.

IX. It shall not be lawful for any person following the trade of cow-keeper or dairyman or purveyor of milk, or being the occupier of a milk shop.

(*a*) To allow any person suffering from a dangerous infectious disorder, or having recently been in contact with a person so suffering, to milk cows or to handle vessels used for containing milk for sale, or in any way to take part or assist in the conduct of the trade or business of the cow-keeper or dairyman, purveyor of milk, or occupier of a milk store or milk shop, so far as regards the production, distribution, or storage of milk; or

(*b*) If himself so suffering or having recently been in contact as aforesaid, to milk cows, or handle vessels used for containing milk for sale, or in any way to take part in the conduct of his trade or business, as far as regards the production, distribution, or storage of milk, until in each case all danger therefrom of the communication of infection to the milk or its contamination has ceased.

X. It shall not be lawful for any person following the trade of cow-keeper or dairyman or the purveyor of milk, or being the occupier of a milk store or milk shop, after the receipt of notice of not less than one month from the local authority calling attention to the provisions of this article, to permit any water-closet, earth-closet, privy, cesspool, or urinal to be within, communicate directly with, or ventilate into, any dairy or any room used as a milk-store or milk-shop.

XI. It shall not be lawful for any person following the trade of cow-keeper or dairyman or purveyor of milk, or being the occupier of a milk-store or milk-shop, to use a milk-store or a milk-shop in his occupation, or permit the same to be used as a sleeping apartment, or for any purpose incompatible with the proper preservation of the cleanliness of the milk-store or milk-shop, and of the milk vessels and milk therein, or in any manner likely to cause contamination of the milk therein.

XII. It shall not be lawful for any person following the trade of cow-keeper or dairyman or purveyor of milk to keep any swine in any cow-shed or other building used by him for keeping cows, or in any milk-store or other place used by him for keeping milk for sale.

XV. If at any time disease exists among the cattle in a dairy or cow-shed, or other building or place, the milk of a diseased cow therein:

(*a*) Shall not be mixed with other milk; and

(*b*) Shall not be sold or used for human food; and

(*c*) Shall not be sold or used for food of swine or other animals, unless and until it has been boiled.

It is further enacted that:—

> "If any person be found guilty of an offence against the Dairies, Cow-sheds, and Milk-shops Order of 1885, he shall for every such offence be liable to a penalty of £5, and in the case of a continued offence to a further penalty of 40s. for each day after written notice of the offence from the Sanitary Authority."

By order of the Sanitary Committee,

Charles Porter, M.D., Medical Officer of Health.

Appended to this Report (*vide* p. 82) is the code of Regulations drawn up by me in December, 1893, and which were sanctioned by the Local Government Board, and adopted by the Council on 2nd May, 1894.

Bakehouses.

These numbered 50, and were regularly inspected during the year. In the majority of cases their condition is fairly satisfactory, but as regards ventilation and lighting a few cellar bakeries are far from perfect. It is satisfactory to record that the Factory and Workshops Act, 1895, prohibits the future use of cellars for this purpose.

The following notice was re-issued during the year calling the attention of all bakers to the provisions of the Factory and Workshops and of the Public Health Acts, relating to their trade :—

COUNTY BOROUGH OF STOCKPORT.

REGULATIONS FOR BAKEHOUSES.

The attention of occupiers of bakehouses is hereby directed to the following provisions of the Factory and Workshops Acts relating thereto :—

(1). A bakehouse shall be kept in a cleanly state, and free from effluvia arising from any drain, water-closet, earth-closet, privy, urinal, or other nuisance. A bakehouse shall not be so overcrowded while work is carried on therein as to be dangerous or injurious to the health of the persons employed therein, and shall be ventilated in such a manner as to render harmless, as far as is practicable, all the vapours, dust, or other impurities generated in the course of the handicraft carried on therein that may be injurious to health.

(2). All the inside walls of the rooms of a bakehouse, and all the ceilings or tops of such rooms (whether such wall, ceilings, or tops be plastered or not), and all the passages and staircases of such bakehouses shall either be painted with oil or varnished, or be lime-washed, or be partly painted or varnished and partly lime-washed; where painted with oil or varnished there shall be three coats of paint or varnish. and the paint or varnish shall be renewed once at least in every seven years, and shall be washed with hot water and soap once at least in every six months; where lime-washed the lime-washing shall be renewed once at least in every six months.

(3). No place on the same level with the bakehouse, and forming part of the same building shall be used as a sleeping place unless it be constructed as follows, that is to say :

> Unless it is effectually separated from the bakehouse by a partition extending from the floor to the ceiling; and unless there be an external glazed window of at least nine superficial feet in area, of which at the least four-and-a-half superficial feet are made to open for ventilation.

(4). It shall not be lawful to let, or suffer to be occupied as a bakehouse, or to occupy as a bakehouse, any room or place unless the following regulations are complied with :—

(i). No water-closet, earth-closet, privy, or ashpit, shall be within or communicate directly with the bakehouse ;

(ii). Any cistern for supplying water to the bakehouse shall be separate and distinct from any cistern for supplying water to a water closet;

(iii). No drain or pipe for carrying off fœcal or sewage matter shall have an opening within the bakehouse.

(5). When a court of summary jurisdiction is satisfied on the prosecution of an inspector or a local authority that any room or place used as a bakehouse (whether the same was or was not so used before the passing of this Act) is in such a state as to be on Sanitary grounds unfit for use or occupation as a bakehouse, the occupier of the bakehouse shall be liable on summary conviction, to a fine not exceeding forty shillings, and on a second or any subsequent conviction, not exceeding five pounds. The court of summary jurisdiction, in addition to or instead of inflicting such fine, may order means to be adopted by the occupier, within the time named in the order, for the purpose of removing the ground of complaint.

Infringement of any of the above regulations entails liability to the penalties described by the Acts.

By order of the Sanitary Committee.

Charles Porter, M.D., Medical Officer of Health.

Slaughterhouses. Meat Inspection.

These numbered 41 and were regularly inspected each week. Some of them are very good, the majority are fairly good, while a few of them are structurally ill-adapted for the use to which they are put. In every case a good supply of water is laid on, and they are kept in a fairly satisfactory condition. Most of them are unfortunately situated in crowded localities and in close contiguity to dwelling houses.

In connection with the question of meat-inspection it is very desirable that in Stockport, as in every other large town, a qualified meat inspector be employed, and where the services of a well-taught veterinary surgeon *with special experience of butchering and meat inspection* cannot be retained, an intelligent butcher is probably the best man for the post. But in order to enjoy really efficient meat inspection it is essential that slaughtering for human food should only be permitted in public abattoirs, where the internal organs of each animal may be examined in connection with the carcase to which they belong. Under existing conditions animals can be quietly killed, diseased internal organs made away with, and other signs of disease rendered unrecognizable at any one of the 41 slaughterhouses at any time of the day or night. I would therefore again draw attention to the desirability of providing a public abattoir as soon as it can be afforded, but in order that such an institution may not become a white elephant on your hands, it is absolutely necessary that powers be previously obtained to enforce the closure of private slaughterhouses within a reasonable period of the opening of the abattoir.

Four seizures of unsound meat were effected during the year. Proceedings were successfully taken in each case and the following penalties inflicted:—10/- and costs, £10 and costs, £5 and costs, £5 and costs.

With regard to one exceptionally bad case in which the diseased animal was obtained from Woodford, the Sanitary Committee ordered particulars of the case, together with a report of the trial of the Stockport butcher to be sent to the Cheshire County Council and to the Macclesfield Rural Sanitary Authority, but I am not aware that any proceedings were taken against the farmer.

The Public Health Act, 1875 (section 116-119) as you are aware, empowers the seizure of unsound food "exposed or deposited for sale or in "preparation for sale," and provides for the infliction of penalties. These clauses, however, do *not* apply to *unsound food which has already been sold,* but this omission is rectified by section 28 of the Public Health Amendment Act, 1890, which extends the provisions of the 1875 Act to apply to "articles "intended for the food of man, *sold* or exposed for sale, &c." During the year a butcher in your town was fined £5 and costs in regard to some meat sold by him to a customer who was made ill by eating some of it, and who then brought it to the Health Department where it was condemned by a magistrate. Strange to say this is the first time that a conviction has been obtained and a penalty inflicted by virtue of this section of the Public Health Amendment Act.

With regard to the **danger to human health resulting from the use of tuberculous meat** the report of the late Royal Commission already referred to under the section relating to milkshops, gives much interesting information. Perhaps its most novel feature is the belief expressed that tuberculous matter when present in meat sold to the public is most commonly due to the contamination of the surface of the meat with material derived from other diseased parts and conveyed thence to the proper meat substance by the hands, knives, and cloths of the butcher during the process of flaying and dressing. This the Commission regard as a danger that would doubtless increase along with increased abundance of the material of tubercle in the carcase. "Rolls of meat prepared by a slovenly butcher, smearing his slices with matter derived from tuberculous glands, or perhaps including some tuberculous membrane in his roll would probably form the maximum of danger to meat consumers." "No cooking operations would be likely to destroy tuberculous material which had thus been sedulously wrapped up." With regard to the influence of cooking upon tuberculous food, Dr. Sims Woodhead, the eminent bacteriologist who was specially employed by the Commission to investigate this question, reports that "in the boiling and roasting experiments as ordinarily carried out in the kitchen the temperature, however high it may be near the surface, seldom reaches 60 degrees C (146 degrees F) in the centre of a joint, except in the case of a joint under 6lbs in weight. Ordinary cooking is quite sufficient to destroy any smeared material that remains on the outer surface of the meat, but it cannot be relied upon in the slightest degree to render innocuous the smeared material when in the centre of a roll, especially when these are more than 3 or 4 lbs weight." Dr. Martin, another skilled investigator employed by the Commission, advocates therefore, "that the operations of slaughter and dressing should be done under skilful supervision, with the object of securing the careful removal and destruction of every part of a carcase that contained any tubercle whatever, and also the destruction of the whole carcase in cases where the animal was found to have advanced or generalised tuberculosis." "Provided every part that is the seat of tuberculous matter be avoided and destroyed, and provided care be taken to save from contamination by such matter the actual meat substance of a tuberculous animal," the Commissioners conclude "that a great deal of meat from animals affected by tuberculosis may be eaten without risk to the consumer."

Tripe Dressing Establishments.

These places number 17, and during the year were regularly inspected. With some three or four exceptions they are all fairly suitable for the use to which they are put; they all possess a plentiful supply of clean water, and were kept fairly well lime-washed and cleansed. One tripe-boiling place was pulled down and rebuilt during the year.

Offensive Trades, &c.

These include:—Knacker and bone boiler, three tanners, one tallow-melter, three gut-scrapers. Complaints in regard to the two latter trades were received and personally investigated by myself as well as by your Inspectors. In each case the nuisance was abated.

Workshops.

The work commenced in the last quarter of 1893 was continued during the year. Cases of overcrowding and want of cleanliness were few in number, the most usual faults being defective and insufficient closet accommodation, and imperfect ventilation. The latter is often a most difficult matter to remedy. To provide a constant supply of fresh air without creating cold and draught is, as you are aware, of paramount importance from a hygienic point of view, but while the physical difficulties in doing so are very great, the inclinations of the workers are even a greater obstacle, for such windows and flues as do exist are carefully fastened or stopped up in most cases, except in the hottest weather.

FACTORY AND WORKSHOP ACT, 1895.

The above Act will come into operation on the 1st January, 1896, and in accordance with its sanitary provisions

(1) A factory or workshop shall be deemed to be overcrowded unless its cubic capacity afford at least 250 cubic feet per each person employed, or during any period of overtime 400 cubic feet of space to every such person.

(2) In every factory or workshop a notice specifying the number of persons who may be employed in each room of the factory or workshop shall be kept constantly so affixed and in such a position as to be easily read by the persons employed therein.

(3) Where notice of neglect, act, or default is given by the Factory Inspector to a Sanitary Authority, the Sanitary Authority must inform the Factory Inspector of the steps taken in consequence of the notice.

(4) If no steps be taken by the Sanitary Authority within one month for punishing or remedying the act, neglect, or default, the Factory Inspector may take the like proceedings, and recover the cost from the Sanitary Authority.

(5) If any occupier of a factory or workshop or laundry or of any place from which any work is given out, or any contractor employed by any such occupier, causes or allows wearing apparel to be made, cleaned, or repaired in any dwelling-house or building occupied therewith, whilst any inmate of the dwelling-house is suffering from scarlet fever or smallpox, then, unless he proves that he was not aware of the existence of the illness in the dwelling-house, and could not reasonably have been expected to become aware of it, he shall be liable to a fine not exceeding ten pounds.

(6) So far as regards sanitary provisions, affixing of notices, &c., the Factory Act shall have effect as if every LAUNDRY in which steam, water, or other mechanical power is used in aid of the laundry process were a factory, and every other laundry were a workshop.

(7) In case of every laundry worked by steam, water, or other mechanical power—

(a) A fan or other means of a proper construction shall be provided, maintained, and used for regulating the temperature in every ironing-room, and for carrying away the steam in every wash-house in the laundry; and

(b) All stoves for heating irons shall be sufficiently separated form any ironing-room, and gas irons emitting any noxious fumes shall not be used ; and

(c) The floors shall be kept in a good condition and drained in such manner as will allow the water to flow off freely.

N.B.—Laundries in which the only persons employed are
(1) Members of the same family dwelling there.
(2) Inmates of prisons, reformatories, industrial schools, or charitable institutions, are exempted from the foregoing regulations.

(8) All the inside walls of EVERY BAKEHOUSE and all its ceilings passages, and staircases, shall be either painted with three coats of paint or varnish once in seven years, and if so painted shall be washed with hot water and soap once at least in every six months; or, instead of being painted, such bakehouse may be limewashed once in six months.

(9.) No underground place not so used at the commencement of this Act shall be used as a bakehouse.

(10) In every factory or workshop where lead, arsenic, or any other poisonous substance is used, suitable washing conveniences shall be provided for the use of the persons employed in any department where such substances are used.

(11) In every factory and workshop adequate measures shall be taken for securing and maintaining a reasonable temperature in each room in which any person is employed.

(12) The Act also imposes upon every medical practitioner attending or called in to visit a patient whom he believes to be suffering from lead, phosphorus, or arsenical poisoning or anthrax, the duty of notifying the same to the Chief Inspector of Factories in London.

Common Lodging Houses.

There are 24 common lodging houses, registered to accommodate 745 persons nightly. I have repeatedly inspected these houses and am of the opinion that only four of them are even reasonably fit for the purpose for which they are used. The lodging houses were inspected regularly as least twice a week, and during the smallpox outbreak were visited nightly for nine weeks by your inspectors, accompanied occasionally by a medical man who vaccinated or re-vaccinated 21 of the inmates who were willing to be thus protected. One case of smallpox was also detected by these inspections and at once removed.

One person was fined 40s. and costs for continuing to receive common lodgers in an unlicensed house, and another person was cautioned for a similar but first offence.

It is a matter for surprise to me that more good and respectable common lodging houses do not exist in Stockport. In Edinburgh and other towns where model lodging houses have been started by private individuals or associations and placed in charge of reliable deputies, they have been largely availed of not only by travellers but by respectable working-men in constant employment, and have proved decidedly successful financially.

Smoke Nuisances.

25 observations were taken during the year. The method adopted is for two inspectors to watch not more than three chimneys for two consecutive hours, marking in a suitable book the proportion of each five minutes of the two hours during which dense, medium, and no smoke is emitted from each chimney. This occupies most of the working morning or afternoon of two inspectors, and where conviction implies no moral disgrace whatever and the fines are nominal, little or no improvement results, and it is not difficult to employ the inspectors more profitably. This is the reason why the number of observations now recorded is so small. The time-limit for dense black smoke is seven minutes in two consecutive hours, and this was exceeded in 5 cases by periods varying from 8 to 27 minutes.

Apart from the evil of actual air pollution the emission of such quantities of smoke has indirectly a most pernicious effect on ventilation of dwellings, as people who like to keep their houses clean, are very naturally disinclined to keep their windows open in a smoky atmosphere.

Houses Let in Lodgings.

These are not yet registered, and there are no bye-laws for their regulation, but their number is considerable, and the matter is one for future consideration.

The Canal.

Several complaints were received of offensive emanations from the canal but on inquiry these were found to be due to an ammoniacal liquid with which some large barges were being filled. Two notices were served on the M. S. & L. Ry. Co. to clear the Canal of carcases of dogs, &c. There are no registered canal boats. A few barges exist, but they are not inhabited.

Contagious Diseases (Animals) Act.

In accordance with the directions of the Sanitary Committee, the provisions of the Swine Fever (Infected Areas) Order, 1894, of the Board of Agriculture were summarised by me in February, 1894, distributed in hand-bill form amongst dealers and butchers, and placarded in the market and fair grounds. In October, 1894, the provisions of the Swine Fever (Infected Areas) Orders, 1894, Nos. 5,194 and 5,196, were similarly summarised and published. Books of certificates and movement licenses were drawn up by me, and a notice was issued to your inspectors describing the symptoms of swine fever. All public and private sales of swine, except by special license of the local authority, were prohibited from February 19th, 1894, to January 1st, 1895. The working of these orders entailed a considerable amount of extra clerical work on the Sanitary Department.

In consequence of the occurrence of a case of suspected rabies within the Borough the Muzzling Regulations were adopted between the 15th October and the 12th November, 1894.

Sale of Food and Drugs Act.

Twenty samples were taken under this Act during the year, and submitted to the Public Analyst, particulars of which are as follow:—Milk, 13; butter, 3; coffee, 3; and lard, 1. It is satisfactory to record that none of these samples were found to be adulterated.

The following cautionary notice calling the attention of vendors of food, &c., to the provisions of the Public Health Act with respect to the sale of unsound food was again widely distributed through the Borough during the summer months:

NOTICE TO FOOD VENDORS, &C.

The attention of Food Vendors is hereby specially directed to the provisions of the Public Health Act, 1875, Sections 116 & 117, which are in substance as follows:—

Any Meat, Poultry, Game, Fish, Fruit, Vegetables, &c., exposed for sale, or deposited in any place for the purpose of sale, or of preparation for sale, and intended for the food of man, which appears diseased, or unsound, or unwholesome, or unfit for food, may be seized by the duly authorized officials and carried away, to be dealt with by a Justice.

If it appears to the Justice that any article of food so seized is diseased, or unsound, or unwholesome, or unfit for the food of man, he shall condemn the same and order it to be destroyed, and the person to whom the same belongs, or did belong at the time of exposure for sale, or in whose possession, or on whose premises the same was found, shall be liable to a penalty not exceeding Twenty Pounds for every Fish, or Piece of Meat, Flesh, or Fish, or any Poultry or Game, or for the Parcel of Fruit or Vegetables so condemned, or at the discretion of the Justice, without the infliction of a fine to Imprisonment for a term of not more than Three Months.

By Order of

June, 1894.

THE SANITARY COMMITTEE.

Legal Proceedings.

OFFENCE.	RESULT.	SENTENCE.
		£ s. d.
Emitting dense smoke from mill chimney	Convicted.	1 0 0 and Costs.
Do. do. do. ...	Do.	1 0 0 and Costs.
Do. do. do. .	Do.	1 0 0 and Costs.
Do. do. do. ...	Do.	0 5 0 and Costs.
Do. do. do. ...	Do.	0 5 0 and Costs.
Exposing unsound meat for sale ...	Do.	5 0 0 and Costs or 1 months hard labour.
Having unsound meat in his possession	Do.	10 0 0 and Costs.
Do. do. do. ..	Do.	0 10 0 and Costs.
Do. do. do. ...	Do.	5 0 0 and Costs.
Selling unsound meat	Do.	5 0 0 and Costs.
Having unsound fish in his possession	Do.	1 month's hard labour.
Do. do. do. ...	Do.	1 month's hard labour.
Being the owner of unsound fish ...	Do.	1 month's hard labour.
Non-compliance of notice *re* Housing of the Working Classes Act ...	Closing Order	Costs.
Do. do. do. ...	Do.	Do.
Do. do. do. ...	Do.	Do.
Do. do. do. ...	Do.	1 0 0 and Costs.
Do. do. do. ...	Do.	1 0 0 and Costs.
Do do. do. ...	Do.	1 0 0 and Costs.
Do. do. do. ...	Do.	1 0 0 and Costs.
Do. do. do. ...	Do.	1 0 0 and Costs.
Do. do. do. ...	Do.	1 0 0 and Costs.
Do. do. do. ...	Do.	1 0 0 and Costs.
Non-compliance with notice to abate nuisance	Twice adjourned for 7 days, then order granted for work to be done forthwith	Costs.
Do. do. do. ...	Adjourned for 7 days	Withdrawn on payment of Costs.
Do. do. do. ...	Do.	Withdrawn on payment of Costs.
Do. do. do. ...	Withdrawn	on payment of Costs.
Non-compliance with notice to cleanse and limewash premises...	Adjourned for 4 days	Withdrawn on payment of Costs.
Do. do. do. ...	Twice adjourned	Withdrawn on payment of Costs.
Allowing unregistered house to be occupied by lodgers	Convicted	2 0 0 and Costs.
Using premises for carrying on the trade of gut-scraping without permission from Local Authority..	Twice adjourned	Withdrawn on payment of Costs.

Lines of Future Action.

The Annual Report of the Medical Officer of Health is required to "indicate directions for further consideration and action." These have been already discussed in detail, and it only remains for me to briefly summarise as follows the various recommendations submitted to you :—

(1) The consideration and adoption of a comprehensive scheme for the conversion of the midden-privy to the water-carriage system of disposal of refuse, and the abolition of Tips within the town.

I have again to record my firm belief that it would be difficult to over-estimate the danger to health resulting from the existing privies, which pollute the air and soil, and are hot-beds for the development of disease-germs. I am aware that this question in Stockport is a tremendous one to face, but, on the other hand, I am convinced, that any other sources of ill-health which may exist in your town, are comparatively small branches on the formidable trunk of insanitation constituted by the existing midden privies.

(2) The improvement, where and if practicable, of the existing system of scavenging, both as regards method and frequency. I am of opinion that this matter might repay special consideration.

(3) The revision of the Bye-laws with respect to the construction of sanitary conveniences in connection with buildings.

(4) The continuance and extension of your efforts to provide for the thorough cleansing and ventilation of the public sewers ; and the removal, as soon as it can be afforded, of the existing defective flagged or bricked sewers.

(5) The general improvement of the housing of the working classes by the continued enforcement of existing legislation in that respect, and as regards new property, *by entirely disallowing the erection of any further privies*, and by enforcing stricter compliance with the building bye-laws, especially those with regard to the drainage of subsoils, the asphalting or concreting of sites, and the provision of water-tight drain-joints.

(6) The provision of additional hospital accommodation, to permit of the separate isolation of each of the more serious notifiable diseases, as well as the better accommodation of the nursing staff ; and the erection of an un-climbable continuous barrier, 6 ft. 6 in. high, around the hospital grounds.

(7) The institution, if practicable, of a system of cottage nurseries subject to inspection, by the voluntary registration of any respectable woman possessed of knowledge as to the feeding of infants and of suitable accommodation for their reception, with the object of minimizing the evils resulting from the employment of nursing-mothers in factories.

Various other lines of sanitary progress might be indicated, *e.g.*, the provision of a public abattoir, but being of secondary importance as compared with the foregoing recommendations, these matters will doubtless have for the present to stand aside.

Charles Porter, Medical Officer of Health.

September 30th, 1895.

APPENDIX No. 1.

Dairies, Cowsheds, and Milkshops Regulations

Made by the Mayor, Aldermen, and Burgesses of the County Borough of Stockport, in the several Counties of Chester and Lancaster, acting by the Council as the Local Authority in and for the said County Borough, under the Contagious Diseases (Animals) Act, 1886, *and the Dairies, Cowsheds, and Milkshops Order of* 1885.

Interpretation of Terms.

1.—Throughout these Regulations the expression "the Sanitary Authority" means the Mayor, Aldermen, and Burgesses of the County Borough of Stockport, acting by the Council as the Urban Sanitary Authority; and the expression "the District" means the Urban Sanitary District of the County Borough of Stockport.

For the Inspection of cattle in Dairies.

2.—In every case where the Medical Officer of Health, the Inspector of Nuisances, or any other officer authorized by the Sanitary Authority in that behalf, has, for the purpose of inspection, entered a dairy in pursuance of the statutory provision in that behalf, no person shall wilfully obstruct any such officer in the inspection of the cattle therein, and the occupier of such diary shall not, without reasonable excuse, neglect or refuse when required by any such officer to render him such assistance as may be reasonably necessary for the purpose of such inspection.

For prescribing & regulating the Lighti'g Ventilation Cleansing, Drainage, and Water Supply of Dairies and Cow-sheds in the occupation of persons following the trade of Cowkeep'rs or Dairymen.

3.—Every person following the trade of a cow-keeper or dairyman shall provide every dairy and cow-shed in his occupation with all necessary and proper means of lighting and ventilation, to secure the health and good condition of the cattle therein.

He shall not cause or suffer any greater number of cattle to be at any time kept in a building used as a dairy or cow-shed than will admit of the provision of 800 *cubic feet* of free air space for each cow.

He shall cause the ventilation of every building which subsequently to the date of the coming into force of these Regulations may be newly occupied as a dairy or cow-shed to be by means of a sufficient number of openings or windows in the walls on two opposite sides of the building, or in the wall on one side and in the roof, so as to afford effectual means of ventilation by direct communication with the external air.

Where such openings and windows are constructed so as to close, he shall, in addition, cause adequate means of constant ventilation to be provided by openings in an external wall of such dairy or cow-shed, or by some other effectual method or appliance.

4.—Every person following the trade of a cow-keeper or dairyman shall, from time to time, as often as occasion may require (except in such cases as are hereinafter specified), cause the ceiling and the internal surface of every wall of any dairy or cow-shed in his occupation to be thoroughly lime-whited or coloured.

Provided that the foregoing requirement shall not apply to any wall the internal surface of which is painted, or where the material of or with which such surface is constructed or covered is such as to render the lime-whiting or colouring thereof unsuitable and inexpedient, and so long as such surface is thoroughly cleansed.

5.—Every person following the trade of a cow-keeper or dairyman shall cause every dairy and cow-shed in his occupation to be effectually drained, so that all urine and liquid filth may be properly carried away.

He shall not permit any inlet to any drain that may be provided for the drainage of a dairy or cow-shed to be within such dairy or cow-shed.

6.—A person following the trade of a cow-keeper or dairyman shall cause every building which subsequently to the date of the coming into force of these Regulations may be newly occupied by him as a dairy or cow-shed,to be so constructed that the floor thereof shall have a fall to a channel which shall discharge over a properly trapped drain made of glazed pipes, or other equally suitable material and situated outside the building, and so arranged that no inlet to any drain or gully shall be within such dairy or cow-shed.

7.—Every person following the trade of a cow-keeper or dairyman shall provide for every dairy and cow-shed in his occupation an adequate water supply of good quality, and proper for the health and good condition of the cattle therein.

He shall cause every receptacle in which such water may be placed for the use of any cattle to be emptied and cleansed as often as may be necessary.

In every case where the water may be stored in a cistern or cisterns, he shall cause such cistern or cisterns to be conveniently placed so as to allow of ready access, and to be properly constructed of slate or of metal, or lined on its inner surface with metal and covered so as to prevent the fouling of the water.

For securi'g the Cleanliness of Milk-stores, Milk shops, and of Milk-vessels used for containing Milk for sale by such persons.

8.—A person following the trade of a cow-keeper or dairyman or purveyor of milk shall cause every milk-store and milk-shop in his occupation to be maintained at all times in a thorough state of cleanliness.

9.—Every cow-keeper, dairyman, and purveyor of milk shall, on every day on which any milk vessel may be used on his premises for the purpose of containing milk for sale, cause every such vessel to be thoroughly cleansed with clean hot water or steam immediately after it shall cease to be in use.

He shall cause every milk vessel that may be returned to him empty to be thoroughly cleansed with hot water or steam before being used to contain any milk intended for sale either by himself or by any other person.

He shall cause every milk vessel when not in use to be kept thoroughly clean.

For prescribing precautio's to be taken by purvey's of Milk and persons selling Milk by retail against Infection or Contamination.

10.—A purveyor of milk, or a person selling milk by retail, shall not cause any milk to be stored on his premises in any cellar or room in which there is any untrapped opening to a drain, or either in the manner of storage or of distribution do any act or thing likely to expose any milk to infection or contamination, or omit to do any act or thing necessary for the due protection of any milk from such infection or contamination.

11.—A purveyor of milk, or person selling milk by retail, shall not use for the delivery of milk for sale to any person, any can or other vessel that may have been in the possession of any person who, he has been informed, or has reasonable grounds for believing was at the time suffering from a dangerous infectious disorder, or any can or other vessel that may have been left at the residence of such person, until such can or vessel shall have been thoroughly disinfected and cleansed.

Penalties.

12.—Every person who shall offend against any of the foregoing Regulations shall be liable for every such offence to a penalty of *five pounds*, and in the case of a continuing offence to a further penalty of *forty shillings* for each day after written notice of offence from the Sanitary Authority.

Provided nevertheless that the justices or court before whom any complaint may be made or any proceedings may be taken in respect to any such offence may, if they think fit, adjudge the payment as a penalty of any sum less than the full amount of the penalty imposed by this Regulation.

Comm'ncement of the Regulatio's

13.—These Regulations shall come into force on and after the first day of July, 1894.

Revocation of existing Regulatio's

14.—From and after the date on which these Regulations shall come into force, all Regulations heretofore made under, or having effect in pursuance of the Dairies, Cows-heds, and Milk-shops Order of 1885, shall, so far as the same are now in force in the district, be revoked.

The Common Seal of the said Mayor, Aldermen, and Burgesses was affixed by order of the Council of the said Borough given at a meeting of such Council held on the 2nd day of May, 1894.

In the presence of

WALTER HYDE,

TOWN CLERK.

Appendix No. 2.

Registered Cow-sheds within the County Borough of Stockport.

Inspector Ramscar.

NAME.	No. of Sheds.	Cubic Capacity.	No. of Cows Allowed.	No. of Cows Sheltered.	Drainage.	Ventilating and Lighting.	Water supply.	Condition as to Paving.	Condition as to Cleanliness	Distance of Manure Heap.	REMARKS.
Wharf Meadow Farm ..	1	6264	7	7	No Drains inside.	Through ventilation well lighted.	Towns Water	Fair	Very fair	10ft.	This shed is constructed of brick piers, with intervals of timber, and is fairly well adapted.
Wood Bank Farm	2	6860 9800	8 12	8 0	Cesspool	Through ventilation fairly well lighted	Towns Water	Good	Very fair	12ft.	Brick structures, well adapted.
Little Moor Cottage	1	1855	2	1	Cesspool	Sherringham ventilators, fairly well lighted	Towns Water	Fair	Fair	40ft.	Wooden structure in fair condition.
Victoria Park Farm ..	1	1520	2	1	One gully trap inside cowshed	Through ventilation fairly well lighted	Towns Water	Fair	Very fair	30ft.	Brick structure, well adapted.
Holly Mount Farm	3	3418 2565 1753	4 3 2	4 3 1	Cesspool	Through ventilation fairly well lighted	Rain Water	Good	Very fair	20ft.	Brick structures, well adapted.
Lisborne House Farm ..	2	3990 3040	5 3	4 2	Surface	Through ventilation fairly well lighted	Towns Water	Fair	Fair	6ft.	One brick and one wooden structure, not very suitable.
Ash Cottage, Great Moor	1	2000	2	2	Cesspool	Fairly well lighted and ventilated	Towns Water	Fair	Very fair	10ft.	Structure built of timber and corrugated iron, and fairly well adapted.
Cherry Tree Farm	2	2740 2300	3 2	9 4	Good	Through ventilation fairly well lighted	Towns Water	Fair	Fair	40ft.	Brick structure, ceiling very low.
Castle Farm	1	2322	3	4	Cesspool	Through ventilation fairly well lighted	Pond	Fair	Fair	10ft.	Brick structure, fairly well adapted.
Dial House, Mile End Lane	2	2275 1576	3 2	4 3	Cesspool	Through ventilation fairly well lighted	* Well and Towns	Very good	Clean	None on premises	One brick and one wooden structure, both well adapted.
Marsland's Farm, Cow Lane	2	2108 1700	3 2	2 5	Cesspool	Through ventilation no windows	Pond	Fair	Fair	6ft.	Brick structures, fairly well adapted.
Hempshaw Gate Farm..	1	2812	3	5	Very good	Through ventilation not very well lighted	Towns	Very good	Very clean	50ft.	Brick structure, fairly well adapted. Ceiling very low.
Pear Tree Farm, Dialstone Lane...	2	2295 2141	3 3	7 4	Open channel to Cesspool	Through ventilation no windows	Towns	Fair	Fair	50ft.	Brick structures, fairly well suited but ceilings very low.
Nangreave Farm	1	780	1	2	No system	Through ventilation no windows	Pond	Bad	Damp and Dirty	50 yds.	Brick structure in dilapidated condition

* Well water for Cattle, but Towns water for House, &c.

Inspector Billingham.

NAME.	No. of Sheds.	Cubic Capacity.	No. of Cows allowed.	No. of Cows Sheltered.	Drainage.	Ventilating and Lighting.	Water supply.	Condition as to Paving.	Condition as to Cleanliness.	Distance of Manure Heap.	Remarks.
Brown House Fold farm	3	3360 3120 2600	4 4 3	6 7 7	Good to Cesspool	Through ventilation well lighted	Towns	Very good	Very clean	14ft.	Brick structures, well adapted.
Danby Farm	2	1729 1601	2 2	6 0	Good	Through ventilation well lighted	Towns and Well	Very good	Very clean	50 yds.	Brick structure, well adapted.

Inspector May.

Northgate street	1	2992	4	2	Good	Through ventilation well lighted.	Towns	Very good	Very clean	75 yds.	Brick structure, well adapted.
Edgeley Farm	4	1296 3248 3690 5200	2 4 4 6	2 7 11 3	Good	Through ventilation windows and louvre lights	Towns and well	Very good	Very clean	15 yds.	Brick structure, suitably adapted
Cale Green Farm	2	5080 2552	6 3	8 6	Good	Through ventilation well lighted	Towns and well	Fair	Clean	20 yds.	Brick structure, well adapted.

TABLE (A).

Table of Deaths during the Year 1894, in the Urban Sanitary District of Stockport, Classified according to Diseases, Age, and Localities.

Names of Localities adopted for the purpose of these Statistics; Public Institutions being shown as Separate Localities.	Mortality from all causes, at subjoined ages								Mortality from Subjoined Causes, Distinguishing Deaths of Children under Five Years of Age.																						
													FEVERS.																		
(a)	At all Ages. (b)	Under 1 year (c)	1 and under 5 (d)	5 and under 15 (e)	15 and under 25 (f)	25 and under 65 (g)	65 and upwards (h)	(i)	Smallpox. 1	Scarlatina. 2	Diphtheria. 3	Membranous Croup. 4	Typhus. 5	Enteric or Typhoid. 6	Continued. 7	Relapsing. 8	Puerperal. 9	Cholera. 10	Erysipelas 11	Measles. 12	Whooping Cough. 13	Influenza. 14	Diarrhœa and Dysentery. 15	Rheumatic Fever. 16	Ague. 17	Phthisis. 18	Bronchitis, Pneumonia and Pleurisy. 19	Heart Disease. 20	Injuries. 21	All other Diseases. 22	Total. 23
Middle Ward	135	52	14	3	3	34	29	Under 5	...	1	...	1	...	...	...	..	...	..	..	..	1	...	10	...	...	5	11	..	...	37	66
								5 upw'rds	...	...	...	..	...	1	...	..	...	...	.	.	..	1	4	2	..	8	16	4	3	30	69
Edgeley Ward	307	91	31	12	20	100	53	Under 5	.	1	1	4	...	..	..	...	...	...	...	...	...	1	19	...	...	2	24	..	...	70	122
								5 upw'rds	..	..	...	2	...	2	..	...	..	.	...	...	..	2	5	1	..	32	38	23	4	76	185
St. Thomas's Ward	224	81	11	10	8	74	40	Under 5	..	...	...	1	...	..	..	...	...	..	1	1	1	...	12	...	...	1	10	...	...	65	92
								5 upw'rds	...	...	1	1	...	..	...	..	1	...	..	..	...	2	...	1	..	23	32	15	2	54	132
St. Mary's Ward	116	41	14	3	6	37	15	Under 5	..	...	1	1	...	...	...	...	...		.	...	...	...	9	..	..	2	14	..	..	28	55
								5 upw'rds	...	..	...	...	...	..	..	...	1	...	1	.		..	...	1	...	12	11	6	..	29	61
Portwood Ward	128	55	9	4	5	32	23	Under 5	..	...	..	.	...	...	...	.	...	...	...	..	...	...	9	...	...	..	26	..	.	29	64
								5 upw'rds	..	...	1	...	..	...	...	...	...	...	..	..	...	...	...	...	.	6	15	8	1	33	64
Heaton Norris Ward	296	105	30	11	8	100	42	Under 5	...	...	...	1	...	..	.	...	..	...	...	..	1	...	23	...	..	5	30	...	3	72	135
								5 upw'rds	...	...	...	..	...	2	...	...	2	...	..	...	...	2	1	1	..	30	38	25	3	57	161
Infirmary	43	1	3	5	9	8	17	Under 5	..	...	...	...	...	...	..	...	...	...	...	.	...	..	...	...	...	...	..	..	...	4	4
								5 upw'rds	..	...	...	...	...	...	..	...	...	...	..	...	...	..	...	...	...	...	4	1	17	17	39
Union Workhouse	171	16	4	2	2	91	56	Under 5	.	...	...	...	...	...	...	...	...	...	...	..	..	..	2	...	...	1	3	...	...	14	20
								5 upw'rds	...	...	...	...	...	...	..	...	...	...	.	...	...	...	2	..	...	28	29	29	...	63	151
Isolation Hospital	12	...	3	4	2	3	...	Under 5	1	1	...	...	...	...	...	..	..	..	...	...	...	...	..	...	...	...	...	1	...	...	3
								5 upw'rds	1	3	1	...	...	3	..	..	...	..	..	...	..	..	..	...	..	...	...	...	...	1	9
Boys' Industrial School	2	...		2	..	...	...	Under 5	..	...	..	...	...	..	..	...	...	..	..	..	...	..	..	...	..	...	...	...	...	...	...
								5 upw'rds	...	..	...	...	...	...	...	.	...	...	...	...	...	...	...	..	...	1	...	..	..	1	2
Totals	1434	442	119	56	63	479	275	Under 5	1	3	2	8	...	...	...	..	...	..	1	1	3	1	84	...	...	16	118	1	3	319	561
								5 upw'rds	1	3	3	3	...	8	...	...	4	..	1	..	..	7	12	6	.	140	183	111	30	361	873
The subjoined Numbers have also to be taken into account in judging of the above Records of Mortality.																															
Deaths occurring outside the District among persons belonging thereto								Under 5																							
								5 upw'rds																							
Deaths occurring within the District among persons not belonging thereto	51	4	1	1	2	27	16	Under 5															1			1	1			2	5
								5 upw'rds	1		1															7	3	6	4	24	46

TABLE (B).

Table of Population, Births, and of New Cases of Infectious Sickness, coming to the knowledge of the Medical Officer of Health, during the Year 1894, in the Urban Sanitary District of Stockport, classified according to Diseases, Ages, and Localities.

Names of Localities adopted for the purpose of these Statistics; Public Institutions being shown as Separate Localities.	Population at all Ages.		Registered Births.	Aged under 5 or over 5.	New Cases of Sickness in each Locality coming to the knowledge of the Medical Officer of Health.										Number of such cases removed from the several Localities for treatment in										Total.	
									Fevers.						Isolation Hospital.					Workhouse Hospital.						
																		Fevers.				Fevers.				
	Census 1891.	Estimated to middle of 1894.			Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Enteric or Typhoid.	Continued.	Puerperal.	Erysipelas.			Smallpox.	Scarlatina.	Diphtheria.	Enteric or Typhoid.	Continued.	Scarlatina.	Diphtheria.	Enteric or Typhoid.	Continued.	Erysipelas.		
(a)	(b)	(c)	(d)	(e)	1	2	3	4	5	6	7	8														
Middle Ward	8050		262	Under 5	...	9	...	2	...	...	...	...	11	25	...	4	...	..	...	...	...	...	...	..	4	13
				5 upw'ds	1	8	...	...	3	1	1	...	14		1	7	...	1	...	...	..	...	...	...	9	
Edgeley Ward	18889		665	Under 5	...	31	1	3	...	...	...	1	36	129	...	15	..	...	...	...	...	...	...	...	15	51
				5 upw'ds	8	52	3	3	15	...	...	12	93		8	25	1	2	...	...	...	..	..	...	36	
St. Thomas's Ward ...	12637		368	Under 5	1	12	2	...	...	...	...	2	17	70	1	8	...	...	...	..	...	..	...	..	9	33
				5 upw'ds	6	18	4	3	12	...	1	9	53		6	11	...	7	...	...	..	...	...	...	24	
St. Mary's Ward ...	6124		226	Under 5	1	12	...	2	...	...	...	...	15	36	1	5	..	...	..	...	...	...	...	...	6	17
				5 upw'ds	3	10	2	...	2	...	1	3	21		3	6	...	2	...	...	...	...	...	..	11	
Portwood Ward ...	8195		235	Under 5	..	10	...	...	1	...	...	...	11	34	...	6	...	1	...	..	...	...	...	...	7	20
				5 upw'ds	..	16	2	...	4	...	...	1	23		...	12	...	1	...	...	..	...	...	...	13	
Heaton Norris Ward	16368		550	Under 5	...	13	2	1	2	...	...	2	20	92	..	9	...	1	...	...	..	...	...	...	10	45
				5 upw'ds	4	36	3	...	15	...	6	8	72		4	27	...	4	...	...	...	..		...	35	
Infirmary				Under 5	...	...	...	...	...	...	...	...	...	9	...	..	...	...	...	..	...	...	...	...	..	2
				5 upw'ds	...	1	...	...	2	...	...	6	9		...	1	...	1	...	...	...	...	...	...	2	
Union Workhouse ...				Under 5	...	...	...	...	...	...	...	...	...	26	..	..	...	...	..	..	..	...	...	...	...	16
				5 upw'ds	10	1	1	...	1	1	...	12	26		...	...	..	...	..	1	1	1	1	12		
Isolation Hospital ...				Under 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
				5 upw'ds	...	...	...	...	...	...	...	...	...		...	...	...	...	...	...	..	...	...	...	..	
Boys' Industrial Sch'l				Under 5	...	...	.	...	...	...	...	..	...	...	...	..	...	.	...	...	...	...	...	...	...	...
				5 upw'ds	...	..	...	...	...	...	...	...	...		...	...	...	...	..	..	...	...	...	...	...	
Totals	70263		2306	Under 5	2	87	5	8	3	...	...	5	110	421	2	47	...	2	...	...	...	...	.	...	51	197
				5 upw'ds	32	142	15	6	54	2	9	51	311		22	89	1	18	...	1	1	1	1	12	146	

Removed to Hyde Isolation Hospital, 10 cases of smallpox from Stockport Workhouse.